Who Shapes Agricultural Transformation in Africa?

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Exploring the Case of the *Alliance for a Green Revolution in Africa* (AGRA) from a Think Tank Perspective

by

Stefan Vicedom
(VCDSTE001)

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Department of Environmental & Geographical Science
University of Cape Town

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Abstract

Due to their high level of complexity and transnational character, environmental and climate change issues increasingly require specialised knowledge and international development strategies. One institution that regularly provides decision-makers with such scientific and international policy expertise is the think tank. With their particular competencies, environmentally-related and climate change related think tanks have become key actors in modern environmental governance systems.

Since many African countries have a high proportion of smallholder farmers who experience daily food insecurity and poverty, the transformation of African agriculture has been prioritised in the agenda of many think tanks, international development initiatives, and aid agencies. This applies equally to the Nairobi-based *Alliance for a Green Revolution in Africa* (AGRA), which was initiated by the Rockefeller Foundation and the Bill & Melinda Gates Foundation in 2006 and is often labelled as an agricultural think tank. Through its activities, AGRA aims to improve food security in African countries by establishing industrial agricultural practices which were integral elements of earlier Green Revolutions. Accordingly, AGRA widely promotes the application of hybrid seeds, synthetic fertilisers, and other technological solutions to enhance agricultural productivity. However, AGRA and its key partners have increasingly been criticised by experts who claim that AGRA's agenda does not sufficiently address the needs of African smallholder farmers and that it mainly represents political and corporate interests from the Global North.

Against this background, this study explored the role of AGRA within the current agricultural transformation in Africa. To this end, the research project analysed AGRA's organisational form, the key elements of its agenda and its network of partners from a think tank perspective. The study further examined how and on what levels AGRA and its partners shape environmental governance processes inside and outside of Africa. Multiple methods were combined to enhance the validity of the findings. These included a desktop study, a network analysis, a discourse-related case study, and key informant interviews.

The findings reveal that AGRA is a hybrid organisation that combines key features of a think tank with strong operational dimensions. The results also demonstrated that due to its unidimensional agenda, AGRA fails to stimulate sustainable agricultural transformation in Africa. AGRA's partnerships are characterised by a Global North bias on the decision-

making level, with the alliance displaying typical features of an ideological advocacy network. The shaping of governance processes by AGRA and its partners was observed at both national and intergovernmental levels.

Keywords: *AGRA; Agro-Ecology; Alliance for a Green Revolution in Africa; Environmental Governance; Environmentally-related Think Tanks; Food Security; Gates Foundation; Green Revolution; Network Analysis; Philanthrocapitalism; Poverty Reduction; Rockefeller Foundation; Smallholder Farmers; Sustainable Agriculture*

Table of Contents

Declaration

I, **Stefan Vicedom**, declare that:

1. The research reported in this mini dissertation, except where otherwise indicated, is my original research.
2. This mini dissertation hereby submitted to the University of Cape Town has not been submitted by me for a degree at this or any other university.
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(Stefan Vicedom)

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List of Figures

List of Acronyms

AASR	Africa Agriculture Status Report
ABInBev	Anheuser-Busch InBev
ACAA	Advisory Committee for Agricultural Activities
ACB	African Centre for Biodiversity
ACo	Atlantic Council
ACT 2015	Agreement for Climate Transformation 2015
ADP	Agro-dealer Development Programme
AFAP	African Fertilizer and Agribusiness Partnership
AfDB	African Development Bank
AFSA	Alliance for Food Sovereignty in Africa
AFSTA	African Seeds Trade Association
AGRA	Alliance for a Green Revolution in Africa
AGRF	African Green Revolution Forum
APF	African Philanthropy Forum
AU	African Union
BMZ	Federal Ministry for Economic Cooperation and Development, Germany
BreF	Brenthurst Foundation
CAADP	Comprehensive Africa Agriculture Development Programme
CaG	Capital Group
CAS	Cornell Alliance for Science
CGIAR	Consultative Group for International Agricultural Research
CIAT	The International Center for Tropical Agriculture

CIMMYT	International Maize and Wheat Improvement Center
CNFA	Citizens Network for Foreign Affairs
DANIDA	Danish International Development Agency
DDPSC	Donald Danforth Plant Science Center
Deere	John Deere
E258	Entertainment 258
EACI	Education for African Crop Improvement
FAF	Fairfax Africa Fund
FANRPAN	Food, Agriculture and Natural Resources Policy Analysis Network
FAO	UN Food and Agriculture Organization
FIAAC	Fund for the Improvement and Adoption of African Crops
FISFAP	Financial Inclusion for Smallholder Farmers in Africa Project
FTMA	Farm to Market Alliance
GAC	Global Affairs Canada
GCCA	Global Call for Climate Action
GIZ	German Development Cooperation
GM	Genetically modified
Hansen	Chr. Hansen
HLPE	High-Level Panel of Experts on Food Security and Nutrition
IATP	Institute for Agriculture & Trade Policy
IFAD	International Fund for Agricultural Development
IFDC	International Fertilizer Development Center
IFPRI	International Food Policy Research Institute
IGD	Institute for Global Dialogue
ILRI	International Livestock Research Institute
IMF	International Monetary Fund

IRRI	International Rice Research Institute
ISF	International Seed Federation
ISFM	Integrated Soil Fertility Management
MAP	Market Access Programme
MMP	Malabo Montpellier Panel
MoAFSM	Ministry of Agriculture and Food Security Mozambique
MoFAG	Ministry of Food and Agriculture Ghana
NEPAD	The New Partnership for Africa's Development
NGO	Non-governmental organisation
NMF	Nelson Mandela Foundation
NORAD	Norwegian Agency for Development Cooperation
NPO	Non-profit organisation
OI	Oakland Institute
PAIP	PAI Partners
PASS	Programme for Africa's Seed Systems
PCTF	PeerCorps Trust Fund
PIATA	Partnership for Inclusive Agricultural Transformation in Africa
PPP	Public-Private Partnership
ProAGRA	Programme for an Alliance for a Green Revolution in Africa
Psaltry	Psaltry International
PSP	Paine Schwartz Partners
SAGCOT	Southern Agricultural Growth Corridor of Tanzania
SDG	Sustainable Development Goals
SEPA	Seed Production for Africa
SHP	Soil Health Programme
SIDA	Swedish International Development Cooperation Agency

TEF	Tony Elumelu Foundation
UK DFID	UK Department for International Development
UN	United Nations
UNWCED	UN World Commission on Environment and Development
USAID	United States Agency for International Development
UT	University of Texas
WEF	World Economic Forum
WFP	UN World Food Programme
WHH	Welthungerhilfe
WRI	World Resources Institute

Chapter 1: The Role of Think Tanks in Environmental Governance

Climate change and environmental issues often show a high level of complexity as well as a transnational character. Accordingly, modern governance systems increasingly have to base their decision-making on specialised knowledge and need to operate within a constellation of global collaborations and networks (Ruser, 2018). One institution that regularly provides decision-makers with such scientific and international policy expertise is the think tank, which thus plays a leading role in today's governance processes (Stone, 2002; McGann, 2016; Ruser, 2018; Pautz, 2020). While classical think tanks such as the public policy research organisation, Brookings Institution, have typically acted in the fields of international affairs, social policies and economics, the rising number of environmentally-related think tanks demonstrates that these organisations have become key actors in modern environmental governance. This observation is confirmed by the latest *Global Go To Think Tank Index Report* (McGann, 2021) which lists the most important think tanks according to their research priorities. In this report, think tanks with a focus on environmental issues are the fifth strongest category (807) after think tanks with a priority on *Global Summits* (1787), *Foreign and Defence Policy* (1426), *Economic Policy* (1026) and *University-Affiliated Research* (987). The number of environmentally-related think tanks hence has exceeded those of more traditional fields such as *Domestic Economics* (722), *Social Policy* (432), or *International Development* (282).

At a basic level, think tanks can be described as institutions that have a strong focus on applied research, which they frequently combine with forms of strategic advice. Hence, the exploration and exploitation of particular knowledge formations and policy ideas marks a key function of think tanks (Frost & Vogel, 2007). Many think tanks also strategically cultivate national and international collaborations that allow them to explore issues from a global perspective and to form effective alliances with stakeholders from different contexts. However, within these constellations, think tanks do not always act as neutral policy advisors. This, for instance, becomes apparent in the context of the US climate change denial movement which was significantly shaped by think tanks such as the conservative and pro-market Heartland Institute (Ruser, 2018). This was achieved by their publication of climate change denial literature, their development of media campaigns, and their influencing of political decision-makers.

Combined, these activities undermined the scientific evidence of anthropogenic climate change and laid the foundation for several anti-environmental regulations (Dunlap & McCright, 2010; Bonds, 2016). The case of the climate change denial movement makes clear that the expertise of think tanks is often driven by a specific worldview, which they try to strategically establish in political, scientific and public spheres. Thus, when exploring the work of think tanks, it is important to not only understand them as single acting organisations but also as part of broader networks whose ideas and values they promote (Ruser, 2018).

1.1 The Case of the Alliance for a Green Revolution in Africa (AGRA)

Given that food insecurity is a key challenge in many African countries, it is not surprising that the transformation of African agriculture has been prioritised in the agenda of many think tanks, international development initiatives, and aid agencies. One organisation that plays a major role in this context is the Nairobi-based *Alliance for a Green Revolution in Africa* (AGRA). AGRA was initiated by the Rockefeller Foundation and the Bill & Melinda Gates Foundation in 2006 and is often labelled an agricultural think tank by the media (O'Sullivan, 2013; Xinhua, 2016; African Harvesters, 2017; Chege, 2019). Since its establishment, AGRA has aimed to improve the food security of various African countries by promoting a number of industrial agricultural practices that were integral elements of earlier Green Revolutions, such as those in Mexico and India between the 1940s and the 1970s (Greenberg, 2012; Patel, 2013; Wise 2020a) (see Section 3.1). One of AGRA's main goals is to enhance the productivity of African smallholder farmers with the aid of technological solutions, including hybrid seeds, synthetic fertilisers and other inputs (Rockefeller Foundation, 2006). In addition to productivity aspects, AGRA's agenda is characterised by a strong market-led approach that is based on the idea that African smallholder farmers need to be integrated more efficiently into the global agricultural economy to increase incomes and reduce poverty (Toenniessen, Aesina & de Vries, 2008). The strengthening of agricultural research systems, the development of new financing mechanisms, and the establishment of a suitable political and legislative environment are described by AGRA as additional objectives (Toenniessen, Adesina & de Vries, 2008; AGRA, 2009). These activities are supported by a broad network of national and international partners that not only include key governmental and intergovernmental organisations but also a large number of universities, research institutes and

foundations, as well as several banks, corporations and non-governmental organisations (Daño, 2007). Thus, AGRA can be understood as a key actor that possesses the potential to deeply shape the future development of African agriculture.

AGRA's activities have been criticised since its early years by an increasing number of experts who argue that its approach lacks overall effectiveness and insufficiently addresses the needs of African smallholder farmers (Daño, 2007; Holt-Giménez, 2008; Bassey, 2012; Greenberg, 2012; Patel, 2013; Wise, 2019; Malkan, 2020a; Mkindi et al., 2020). Many of these critics argue that AGRA fails to take into account alternative ways of agricultural development and that it primarily acts as a gateway for diverse corporate and political interests from the Global North.

A growing number of actors from civil society and the academic community have questioned the legitimisation of AGRA and have publicly called on AGRA's partners to cease their support. Most recently, the Alliance for Food Sovereignty in Africa (AFSA) and a group of African faith leaders called on AGRA's main donors to stop promoting an industrial agriculture revolution in Africa (IATP, 2021). They argued that AGRA's approach does not improve the situation of African smallholder farmers and that the funding should be rather used to strengthen agro-ecological farming practices.

AGRA also has been in the spotlight due to its president, Agnes Kalibata, who was announced as the United Nations (UN) Secretary-General's Special Envoy to the *2021 Food Systems Summit* in 2019. Several organisations have criticised this appointment, since AGRA and Kalibata hold close relations to the private sector and hence bring strong corporate interests into the UN's decision-making processes (Day, Canfield & Wallaia, 2020). These issues were brought forward in two open letters signed by more than 750 organisations and led to a wide-ranging boycott of the summit among civil society actors (Urhahn et al., 2021).

AGRA's organisational status and structure remains ambiguous. Although AGRA is described regularly as an agricultural think tank by the media, there has been little scientific exploration as to whether this characterisation is accurate. Exploring this question forms part of this dissertation.

1.2 Research Objectives and Research Questions

The aim of the study is to contribute to a better understanding of AGRA's role in agricultural transformation in Africa. To this end, this research aims to examine AGRA's organisational form as well as its particular agenda. Based on the label that is widely used in the media to describe AGRA (O'Sullivan, 2013; Xinhua, 2016; African Harvesters, 2017; Chege, 2019), the study intends to analyse AGRA from a think tank perspective. This frame not only allows the examination of AGRA's organisational characteristics and the features of its network, but it also provides an approach to identify the key elements of AGRA's agenda and to explore how the organisation shapes current environmental governance processes. In doing so, the study aims to address existing gaps in the literature and to deepen the analysis of AGRA and its activities.

The study centres around the following research questions:

1. To what extent does AGRA exhibit the characteristics of a think tank?
2. What are the key elements of AGRA's agenda, and are these adequate to stimulate ecologically, socially and economically sustainable agricultural transformation in Africa?
3. How and on which levels does AGRA shape governance processes in and outside of Africa?

1.3 Importance of the Study

The study addresses various key aspects regarding AGRA, the ways in which agriculture is being transformed in Africa, and the role of think tanks in environmental governance. Given that the agenda of AGRA is highly contested, a further assessment of its organisational structure and activities helps to define its character and impacts more closely. By analysing AGRA's organisational form, its programmatic key elements and its network of partners from a think tank perspective, the research provides a useful basis to identify AGRA's broader agenda and the key players that support and shape it. With the exploration of these aspects, the study also demonstrates how AGRA and its partners influence current governance processes. In so doing, the study aims to increase the knowledge about AGRA's decision-making processes. Since some of these facets only have been examined superficially in the

literature, the thesis contributes to knowledge about AGRA's organisational form, the nature of AGRA's network, and the shaping of public and scientific debates by AGRA's alliance.

The analysis raises questions about how agriculture is being transformed in Africa and whether these changes are sustainable. In addition to food security and poverty reduction, the study takes a closer look at inclusion and the importance of ecologically sustainable agricultural practices. Shortcomings are identified and areas of improvement are highlighted for alternative agricultural development options. In this sense, the study contributes to deepening debates about an agricultural transformation that sufficiently takes into account the specific conditions of African countries and adequately addresses the diverse needs of African smallholder farmers.

A particular focus is placed on the phenomenon of environmentally-related think tanks, which has been scarcely explored in the literature. The research identifies the general key characteristics of think tanks, their role in modern governance systems, and the strategies they use to shape today's environmental governance processes. By reflecting upon think tanks from the viewpoint of African countries, the study highlights and discusses some of the specific challenges that think tanks in the Global South face. Thus, the study provides a basis for further research regarding the importance of environmentally-related think tanks and their potential contribution to environmental governance processes in the Global South.

1.4 Structure of the Study

The thesis is organised into six chapters. The first chapter has presented an introduction to the thematic context, defined the research objectives and the research questions, and has described the importance of the study. Chapter 2 outlines the methods used to conduct the research. Chapter 3 provides a literature review explaining the concept of the Green Revolution and its uptake in Africa, as well as the particular history and agenda of AGRA. It also covers the existing debates regarding the characteristics of think tanks and their role in modern governance systems. The findings of the research are presented in Chapter 4. Chapter 5 discusses the key outcomes of the study and reflects upon their implications. Chapter 6 concludes the thesis and provides recommendations.

Chapter 2: Methods

The methods used to conduct the research included a desktop study of relevant literature, a series of anonymised key informant interviews, a network analysis, and a discourse-related case study. This chapter will expand on each of these methods.

2.1 Desktop Study

The first part of the study was conducted through desktop research. This allowed large parts of the existing literature to be reviewed and for the most relevant research questions to be identified. Key publications were identified by first reviewing the recent literature. Relevant books, essays, reports, and newspaper and online articles were systemically examined, and publications released between AGRA's formation in 2006 and the completion of this research were prioritised. In this systematic analysis, the thematic categories developed for the key informant interviews served as major reference points (see Section 2.2.3). A focus was placed on the concept of the Green Revolution and its historical application in countries such as Mexico and India. Reasons for the recent adoption of the Green Revolution concept in Africa were considered, and linkages to AGRA and its strategies were explored. This especially applied to AGRA's agenda as well as its organisational structure and its network. The desktop study also examined existing think tank literature to gain insights into the current theoretical framing of these bodies. This included general concepts about the structure, work and biases of think tanks as well as their specific role within modern governance systems and the field of environmental governance. Key aspects identified in the desktop study are thoroughly discussed in Chapter 3.

2.2 Key Informant Interviews

Key informant interviews were used since this is a useful method of gaining further inside knowledge about different key topics. The aspects discussed in these interviews included the agenda and partnerships of AGRA, the associated issues of food security and poverty reduction, and the specific role of think tanks in modern governance processes. By combining the interviews and the other methods with the desktop research the study followed the strategy of triangulation, where multiple methods are used to enhance the validity of the findings (Carter et al., 2014).

2.2.1 Data Collection and Structure of the Interviews

An advantage of informant interviews is that they involve direct contact between the interviewer and respondent. This makes it possible to gain new insights by flexibly exploring key aspects (Abels & Behrens, 2009). However, this also poses the risk that the conversation may deviate from the intended topic. Against this background, it was decided to base all interviews on a semi-structured questionnaire. This ensured that the most important issues were addressed while also providing sufficient flexibility to spontaneously expand upon new aspects during the conversation. The semi-structured questionnaires also enabled statements to be compared more efficiently.

With the planned selection of interview partners in mind, two separate questionnaires (see App. 1) were designed for the survey – the first focused on AGRA-related issues and the second on the work of environmentally-related think tanks. Both questionnaires followed a similar structure in which general questions were placed in the first part, more detailed questions in the second, and a request for personal outlooks on key issues at the end.

13 interviews were conducted by the researcher between May and September 2021 via the online platform, *Zoom*. This included interviews with informants from the following organisations and bodies: *African Centre for Biodiversity* (ACB); *Food, Agriculture and Natural Resources Policy Analysis Network* (FANRPAN); *Institute for Agriculture & Trade Policy* (IATP); *Institute for Global Dialogue* (IGD); *Malabo Montpellier Panel* (MMP); *Oakland Institute* (OI); *Rockefeller Foundation* (RF); *UN Food and Agriculture Organization* (FAO); *University of Texas* (UT) and the *World Resources Institute* (WRI). Three informants who preferred to keep their institutional affiliation anonymous were also interviewed. Each interview took approximately 45 minutes and was audio recorded for transcription. In advance of the interviews, each respondent was sent a consent form which outlined relevant ethical implications in detail (see Section 2.2.4). The key informants were free to express their views at any point during the interviews.

2.2.2 Sample Selection

The survey included two main groups of key informants. The first group encompassed informants from within and outside of AGRA to gain further insights on the organisation's agenda and structure. These respondents were selected either on the basis of their professional relationship to AGRA or their research focus. Of the eight key informants in this group, four had either formerly worked for AGRA or still held positions in one of AGRA's key partner organisations. This applies to *Informant_MMP*, who currently is a member of the *Malabo Montpellier Panel*; *Informant_RF*, who holds a leading position at the *Rockefeller Foundation*; and *Informant_FAO,* who works in the regional office for Africa of the *UN Food and Agriculture Organization*. An interview was also conducted with *Informant_1*, who occupies a leading role at an African agriculture research organisation but preferred to keep the details of their institutional affiliation anonymous. The other four key informants of this group came from organisations that analyse AGRA's work from an external perspective due to their professional interests in food security, food sovereignty, and biodiversity issues. This included *Informant_IATP*, who holds a leading position at the *Institute for Agriculture & Trade Policy*; *Informant_UT*, who is a research professor at the *University of Texas* in Austin; and *Informant_ACB*, who works for the *African Centre for Biodiversity*. *Informant_2*, who is involved in a leading African food sovereignty organisation but decided against naming their institutional affiliation, also belongs to this category.

For the second group, five additional key informants with a professional background in the think tank environment were selected. The interviews with these informants aimed to clarify the specific role of think tanks in modern environmental governance systems within and outside of Africa. Interviews were conducted with *Informant_OI* from the *Oakland Institute*; *Informants_FANRPAN,*[1] who hold leading positions at the *Food, Agriculture and Natural Resources Policy Analysis Network* in South Africa; *Informant_IGD*, who works for the *Institute for Global Dialogue*; and *Informant_WRI*, who is an agriculture expert at the *World Resources Institute*. The group also included *Informant_3*, who is responsible for governance issues in one of the leading

[1] This particular conversation was held with two experts of the FANRPAN who preferred to jointly represent their organisation in a group interview.

environmentally-related think tanks in Germany but preferred to keep their institutional affiliation anonymous.

All respondents were initially contacted via e-mail with an official interview request describing relevant conceptual, organisational and ethical aspects of the interview process. During the selection of the interview partners, a particular focus was put on the criteria of age, gender, and job function to ensure the highest possible diversity of perspectives.

2.2.3 Data Analysis

For the data analysis, each interview was transcribed and subsequently divided into thematic categories. As outlined by Moore and McCabe (2005), this method of arranging information according to classes is an efficient way of making the data gathered more comparable. Thus, a content analysis not only helps to reduce and simplify the collected data but also is a useful tool to faster relate the different perspectives of the respondents on a particular issue to each other.

For the content analysis of the AGRA-related interviews, the following categories were applied:

- AGRA's general agenda
- AGRA and food security
- AGRA and poverty reduction
- AGRA and ecological sustainability
- AGRA and inclusion
- AGRA's partnerships
- AGRA's organisational form

The analysis of the think tank related interviews was based on the following categories:

- Key attributes of think tanks
- Think tanks in modern governance systems
- Think tanks and environmental issues
- Communication and advocacy strategies

- Think tanks and knowledge production
- Think tanks in the Global South

2.2.4 Ethical Implications

Since the survey was based on anonymised interviews and only included informants familiar with situations in which they professionally express their opinion, the interviews posed few ethical risks. However, one particular ethical issue that occurred was the naming of the interview partner's institutional affiliations. The naming of these affiliations was important to make the context of particular statements transparent for the reader;[2] however, it also increased the risk that an interview partner might be identified by a third party. Thus, an additional section was incorporated into the consent form that gave the interview partners the opportunity to explicitly agree or refuse to the naming of their institutional affiliation. The consent form also outlined the fact that the participation was voluntary and that the interview partner had the right to withdraw the consent at any point before or after the interview. Ethics approval from the University of Cape Town was obtained on April 23rd, 2021 (approval code: FSREC 043 – 2021). All interviews were conducted in a manner that demonstrated neutrality and respect.

2.2.5 Limitations of the Key Informant Interviews

Despite repeated interview requests sent via multiple channels and contacts, a number of organisations refused to participate in the survey. This especially applied to AGRA and the Gates Foundation. Thus, to a certain degree, the data-set lacks direct inside views from some of the key actors. Because respondents were reluctant to be critical about their own organisations, the views were also often biased towards particular positions.

2.3 Network Analysis

According to Ruser (2018), key aspects that need to be considered when assessing the agenda of a particular think tank include the characteristics of its network. Thus, an analysis of AGRA's partnerships and collaborations was performed to identify

[2] Abel and Behrens (2009) point to the importance of recognising that informants might use interviews to place strategic narratives. For the reader to be able to classify these as such, it is helpful if some context of the speaker's position is provided.

AGRA's core network and its most important actors. The following paragraphs describe the measures that were applied to predefine the structure of this network, as well as the specific approach that was used to collect the relevant data. The last sections provide further information regarding the visualisation of the network graphs and the limitations of this method.

2.3.1 The General Network Measures

Since the main objective of the network analysis was to identify AGRA's core network, the structure of an ego-network[3] was used, with AGRA as its ego. In its scope, the ego-network was limited to significant relations of the first and second order[4] due to the fact that these relations usually represent the core network (Hanneman & Riddle, 2016; Marin & Wellman, 2016). In this context, "significant relations" were defined as a connection between two actors characterised by a proven flow of money, information or personnel. However, since in most cases the exact direction of such flows could not be conclusively ascertained, all relations were treated as undirected.[5] Moreover, only institutional actors were included in the network. As such, individual persons were treated as representatives of their organisation.

All identified actors were classified in terms of their geographical background and their organisational form in order to generate additional network analysis parameters. The *Geographical Background* attribute consisted of four categories (*Africa*, *North America*, *Europe* and *Others*) and was determined by reference to the location of the official headquarters of the particular actor. This way, it became possible to also include the geographical background information of organisations which mainly operate in a supranational way such as the World Bank. This particular background information was considered important since intergovernmental organisations often

[3] The literature generally distinguishes between *whole networks* and *ego-networks*. While the former focuses on the overall structure of a specific field or body (such as the relationships between all employees within a company), the latter explores the network that surrounds a particular actor (for instance, the relationships of a company's chief executive officer) (Marin & Wellman, 2016). In *ego-networks* this particular actor is called the *ego*.

[4] In an *ego-network*, a relation of the first order typically denotes the direct relationship between the *ego* and another actor. In contrast, a relation of the second order exists in cases where the *ego* is connected indirectly with a third actor via a mutual intermediary (Hanneman & Riddle, 2016).

[5] If a relationship implies a directional flow of money, information, etc. from one actor to the other, it is named a *direct relation*. An *undirected relation* exists in cases where the direction of such flows is undefined (Marin & Wellman, 2016).

represent certain geopolitical agendas which are linked to their geographical origin and their geographical centres of power (Shapiro, 2017).[6]

In a similar fashion, each actor was defined according to the attribute of *Organisational Form*. This comprised seven categories: *Foundations*, *Non-governmental Organisations*, *Governmental Organisations*, *Intergovernmental Organisations*, *Universities and Research Institutes*, *Corporations* and *Banks and Funds*. The *Non-governmental Organisations* category was broadly defined and covered all non-profit organisations that operate independently of governments and do not show a philanthropic or research focus. Foundations directly linked with corporations (such as the Mastercard Foundation) were allocated to the *Corporation* category due to their affiliated role.

2.3.2 Data Collection

For the data collection, two separate lists were created, the first including all network actors (nodes) and the second, all relations (edges) between those actors.[7] This approach was chosen due to the specific requirements of the *Gephi* software which was identified as adequate tool for the final visualisation of the network graphs.

2.3.2.1 General Sources

To collect the relevant nodes and edges of AGRA's core network, a number of different sources were reviewed and analysed. In a first step, this included the evaluation of all 11 annual reports which were published by AGRA between 2009 and 2020.[8] Moreover, 25 academic papers, reports and articles with a particular focus on AGRA's network and its actors were examined (see App. 2). These materials systematically cover the period of AGRA's activities between 2006 and 2021 to identify AGRA's current partnerships as well as past key actors. According to Carroll and Sapinski (2016), past

[6] For instance, the UN (whose headquarters are mainly situated in the US and Europe) was initiated by US president Franklin Roosevelt after the Second World War to maintain international peace. Other key actors were France, the Soviet Union and the United Kingdom. Developing countries were widely excluded at these early stages due to their status as colonies. This power imbalance still dominates many of today's UN decision-making processes (Thakur, 2020).
[7] In the literature the term *node* is used to describe an individual member of a network. The relationship that connects two particular network members is named an *edge* (Marin & Wellman, 2016).
[8] This does not apply to AGRA's annual report for the year 2014 (published in 2015) which could not be downloaded from AGRA's webpage and which was not available upon request.

key actors can still be considered relevant for today's network since in many cases, they continue to support their former partners in financial and non-financial ways. Further data was collected from 220 webpages of AGRA and its partners, with a particular focus on the official listings of institutional collaborations and affiliations. These data-sets were complemented by an analysis of AGRA's Twitter account and the partnership information that was gained during the interviews.

2.3.2.2 The Collection of Nodes

To identify the key partners among the large number of actors in AGRA's network, the following selection criteria were applied in the review of reports, papers, articles and webpages. First, each relevant actor had to show a significant relation to AGRA in a direct or indirect way. Direct relationships implied a direct connection to AGRA, whereas indirect relationships applied to cases where an actor was explicitly linked to AGRA via another network node. These criteria reflected the basic structure of the network as a constellation of relationships of the first and second order. Since the study aimed to analyse the role of AGRA and its network within national and transnational governance processes, institutions and corporations with a focus on regional activities were largely excluded. This especially applied to the numerous organisations and companies that provided technical assistance on a regional level. Organisations and corporations now officially defunct were also excluded. The data-set also excluded actors where the significance of the relation to AGRA remained vague with regard to the flow of information or financial and personnel resources.

2.3.2.2.1 Personnel Interlocks

In an additional step, a closer look was taken at the background of AGRA's current board members and their personnel interlocks.[9] By doing so, the study addressed an important observation of the existing network analysis literature which highlights that personnel interlocks are a key component of today's networks (Carroll & Sapinski, 2016). The professional affiliations of each board member were examined using

[9] As outlined by Carroll and Sapinski (2016), personnel interlocks occur when an individual directly links two or more organisations due to his or her position. This, for instance, can be observed in cases where a person simultaneously serves as a board member at different institutions or switches leadership positions between two organisations. According to the authors, such personnel interlocks are a key element of today's elite networks since they allow to strategically occupy the most powerful positions within multiple organisations.

publicly available online profiles. All identified organisations and corporations that exhibited a relevant link to the field of agriculture or the food industry were subsequently included in the data set.

2.3.2.2.2 Twitter Analysis

In order to integrate the most influential actors of AGRA's social media network into the data-set, an analysis of AGRA's Twitter account was performed on 21 May 2021. The Twitter platform was selected because it is one of the most common social media channels through which organisations communicate political and scientific news. On the day of the analysis, AGRA's official Twitter account (@AGRAAlliance) showed a total number of 37 951 followers.[10] The analysis of these followers was performed with the online tool, *Tweepi*, which is widely used in the marketing field to gain additional information about a specific Twitter member. It displays all following accounts of a particular Twitter user and also shows how many followers these following accounts have. The 20 most influential followers of AGRA's account were identified by their own number of followers, which directly indicated their overall reach. In a final step, the 20 most influential followers were compared with the existing data-set to rule out potential overlaps (see App. 3).

2.3.2.2.3 Key Informant Interviews

Supplementary data was gained during the interviews, where the informants were explicitly asked about AGRA's key partnerships (see App. 1). Mentioned actors not yet part of the data-set were included in the collection of nodes.

2.3.2.3 The Collection of Edges

The collection of edges was carried out in two stages. The first phase was directly linked to the collection of the node data. As described, a node was only considered relevant if it showed a significant direct or indirect relationship to AGRA. Accordingly, every identified node also automatically represented a relevant connection within the network and subsequently was recorded in the edges list. Whereas this approach

[10] At the time of the analysis, AGRA followed 1,051 Twitter accounts. However, while AGRA's followers clearly form a significant relationship with the organisation due to the regular exchange of information, it remains unclear if the accounts that are followed by AGRA interact with AGRA at all. Given this lack of evidence for a significant relationship, the 1,051 accounts were excluded from the Twitter analysis.

clearly defined the allocation of an edge for a single actor, it did not adequately cover cases in which several actors were involved in a collaborative project with AGRA. Thus, at points where the details of a collaboration were described, each actor was considered a mutual partner of all other participating actors, since collaborative projects usually imply the mutual sharing of information as well as financial and personnel resources. Additional edges were gained after the completion of the nodes list to further specify the interconnectedness between the identified actors and hence improve the validity of the overall network structure. For this step, the webpage of each network actor was examined in relation to other network nodes. Since this implied the review of more than 400 webpages, it became necessary to limit the research to the official lists of partners and funders. In cases where an actor's webpage did not include such a list, the equivalent data was collected from the latest annual report. If such a report was not available, no additional connections were noted. For transparency, the source of every identified relation was documented in the edges list during the complete collection process. This list is available upon request.

2.3.3 The Visualisation of the Network Graphs

For the design of the final network graphs, the latest version of the open-source software, *Gephi* (Gephi 0.9.2), was used. This software was selected due to its particular features for the analysis and visualisation of small and medium-sized networks. In a first step, the size of all nodes was ranked by applying the attribute of *Eigenvector Centrality* which measures the total relations of each node within the network and thus indicates the individual nodes' overall importance. This was followed by the design of the basic network graph with the layout options, *Force Atlas 2* and *Noverlap*. This elementary network graph subsequently served as a basis to visualise different aspects of AGRA's network in five final graphics. The first of these graphics (Fig. 9) covered the complete network, whereby the *Organisational Form* of each node was colour coded. With the aid of the software's data laboratory, the aforementioned network was reduced to the 137 actors listed as official partners on AGRA's webpage for the second graph (Fig. 10). The third graph (Fig. 11) showed the 25 most influential actors within AGRA's network which were ascertained with the *Degree Range* filter. In the last two graphics (Fig. 12 and 13), the nodes were arranged in particular structures that reflected their organisational and geographical attributes. In each graph, all nodes

were colour-coded according to their respective attributes and divided into the relevant subgroups.

2.3.4 Limitations of the Network Analysis

Although the network analysis generally demonstrates connections between actors, it does not contextualise the exact nature of these relations sufficiently (Marin & Wellman, 2016). Thus, crucial aspects – such as the strength of collaboration or potential power imbalances – remain unclear. Moreover, the data-set is based mostly on partnerships and collaborations that are documented in publicly available sources. Accordingly, it only includes a very limited number of informal relationships and collaborations.

2.4 Discourse-related Case Study

The method of discourse analysis was identified as an adequate approach to explore how AGRA and its partners proactively shape the public and scientific debate. Thus, the discourse-related case study examined the text, *Scientific meta-analysis: Agro-ecology risks harming the poor and worsening gender inequality in Africa*, which was published by Mark Lynas and the Cornell Alliance for Science (CAS) in July 2020. It is important to note that due to its focus on only one text, the analysis did not explore the discourse characteristics comparatively but rather did so in a paradigmatic manner.

2.4.1 Object and Objectives

According to Jäger (2004), discourse analysis generally allows one to study the deeper political and ideological meaning of a written or spoken text. In this sense, it is a useful tool to identify the orientations and motivations of a particular actor that participates in a public or scientific debate. But a discourse analysis also reveals some of the key strategies that are used by this actor to transport and establish the intended meaning. Against this background, this method was applied during the study to further examine the communication strategies of AGRA and its partners as well as the deeper motivations that constitute these activities. The research object for this analysis was the aforementioned article by Lynas (2020), which was published on the online blog of the CAS in July 2020. This article was selected due to the fact that the CAS generally acts as important public and scientific voice of AGRA's network (AGRA

Watch, 2020). Moreover, after its release, the article also was publicly promoted by AGRA and its *Chief of Staff and Strategy*, Andrew Cox (Malkan, 2020a).

2.4.2 Data Collection and Data Analysis

Corresponding with the approaches developed by Chilton (2004) and Jäger (2004) for the collection and analysis of data, different aspects of the text were examined. This included its *general context*, its *structural features*, its *linguistic characteristics*, and its most important *discursive statements*. A number of coding categories were developed to explore the relevant key themes. The key themes were identified and highlighted using a paper-based coding process with categories covering the following subject areas:

- Agro-ecology
- Agricultural productivity
- Food security
- Technological and scientific innovations
- Smallholder farmers
- Gender inequality

Based on the identified information, a content analysis was performed. During this content analysis, the different data categories were linked to ascertain how the structural, linguistic, contextual and thematic aspects of the article are used to generate a certain meaning. In a final step, the results were interpreted with respect to the research objectives.

2.4.3 Limitations of the Discourse-related Case Study

Since the discourse-related case study only included one text, its representational quality clearly is limited. Moreover, subjective perspectives cannot be excluded when it comes to the interpretation of the results. However, the discourse analysis still helps to highlight some general patterns and strategies that provide insights into the ideological framing of AGRA and its partners.

Chapter 3: Literature Review

This chapter describes the concept of the Green Revolution and its uptake in Africa. It also explains the particular history and agenda of AGRA. The literature review further clarifies the characteristics of think tanks and their role in modern governance systems.

3.1 The Origin of the Green Revolution and Its Global Uptake

The term *Green Revolution* was likely coined by William Gaud in his role as administrator of the US Agency for International Development (USAID).[11] In 1968 he pointed out:

> These and other developments in the field of agriculture contain the makings of a new revolution. It is not a violent Red Revolution like that of the Soviets, nor is it a White Revolution like that of the Shah of Iran. I call it the Green Revolution (Gaud, 1968).

Although the term only became popular in the late 1960s, the actual emergence of the Green Revolution can be dated back to the early 1940s. In 1943, the Rockefeller Foundation, together with the Mexican government and US development advocates initiated the *Mexican Agricultural Programme*, which aimed to transform the Mexican agricultural system by establishing a wide range of new measures. These measures mainly included the introduction of modified high-yield seeds, the usage of synthetic fertilisers and pesticides, the development of irrigation systems and infrastructure, as well as the strengthening of agricultural research and the transformation of agricultural policies (Gaud, 1968). That this set of measures was not particularly designed for the context of Mexico but rather marked an overarching concept to globally enhance the agricultural productivity of developing countries becomes apparent in an internal strategy paper by the Rockefeller Foundation's Advisory Committee for Agricultural Activities (ACAA) (ACAA, 1951). In this paper, the committee points out that the improvement of agricultural systems in developing countries is a critical factor to achieve food security and to reduce poverty in the long term. It also outlined how the

[11] Occasionally, the genesis of this term also is attributed to Wilbur Hugh Ferry who worked as public relations advisor for the *Ford Foundation* and the *Fund for the Republic* during the 1950s. However, due to a lack of clear evidence for this assumption, the origin of the term is widely linked to Gaud in the literature (see also Patel, 2013).

Rockefeller Foundation could contribute to the worldwide implementation of these programmes. The transfer of this agricultural approach to other regions was a key element of the Green Revolution concept and eventually led to similar agricultural transformations in Central America, India and South East Asia during the 1950s, 1960s and 1970s (see Fig. 1).

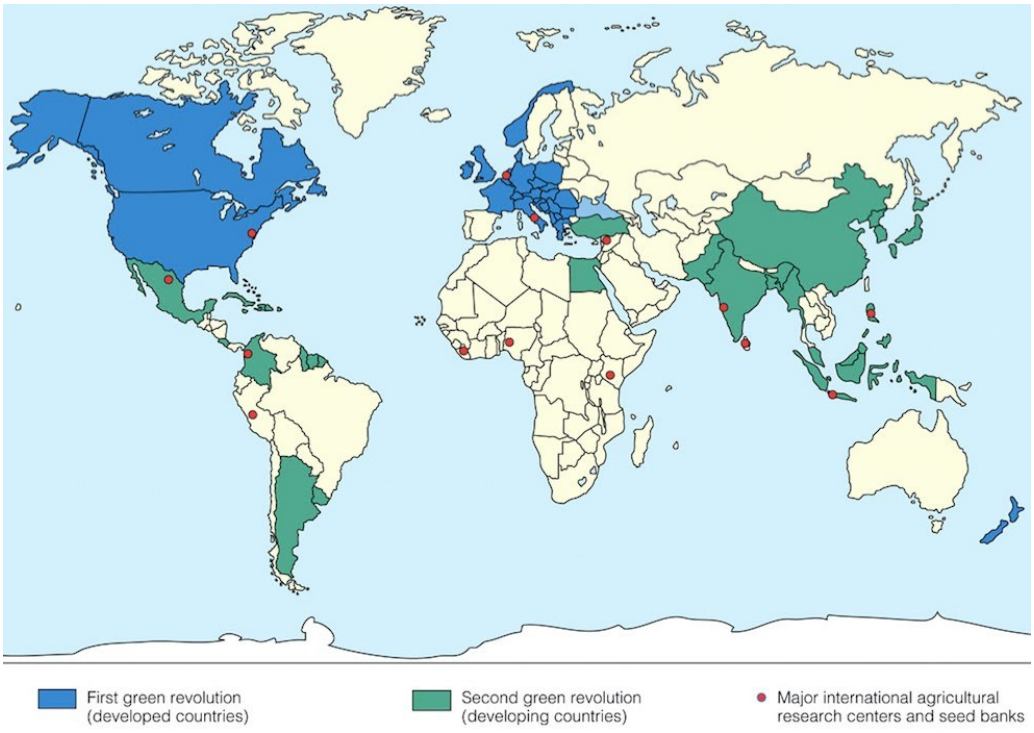

Fig. 1: The countries which are commonly considered to have been part of the worldwide Green Revolution. In the academic debate, the term "Green Revolution" mainly refers to the agricultural transformations in developing countries which are coloured in green.
Source: Suckley (2006).

3.1.1 Key Debates Around the First Green Revolution

Examination of the literature which accompanied the early stages of the Green Revolution reveals that most publications were supportive of the Green Revolution approach. Stakman et al.'s (1967) study, for example, highlighted that the measures in the agricultural revolution in Mexico led to a clear increase in yields and thus could serve as a blueprint for the global fight against hunger. In a similar fashion, the paper by Hicks (1967) explored the socioeconomic dimensions of the Mexican agricultural transformation and showed that the implemented programmes enhanced the situation of rural farmers. This view was shared by the agronomist, Norman Borlaug, who introduced many of the early high-yield wheat varieties and was awarded the Nobel

Prize in 1970. In his acceptance speech, he emphasised the efficiency of Green Revolution measures and outlined their significance for future challenges such as population growth (Borlaug, 1970).

However, from the 1970s onwards, an increasing number of critical views pointed out the adverse social, economic and ecological impacts of the Green Revolution agenda. Falcon (1970) argued that the Green Revolution inherently created a sequence of linked problems which include production aspects in the first phase, marketing and distribution issues in the second, and problems of equity and employment in the subsequent stages. The new Green Revolution technologies also led to socioeconomic discriminations and often resulted in the displacement of small-scale farmers (Griffin, 1979). Esteva (1983) historicised the Green Revolution from the perspective of rural Mexican farmers and found that the mounting number of social and political conflicts clearly outweighed the benefits of the new agricultural system.

Bardhan (1970) explored the role of agricultural labourers in the Indian Green Revolution and concluded that the measures had no positive impact on the economic situation of rural farmers. Further studies showed that the Green Revolution in India mainly benefited farmers who owned capital and land but disadvantaged farmers that did not possess sufficient resources (Bowonder, 1979; Prahladachar, 1983).

Several authors addressed the ecological impacts which typically accompanied Green Revolution approaches. Pimentel et al. (1987) and Pimentel and Pimentel (1990), for example, demonstrated that the use of synthetic fertilisers negatively impacted local ecological systems and that input-intensive agriculture significantly added to the global problem of land erosion. The broad introduction of similar hybrid seed varieties also led to the loss of genetic variability and a higher consumption of synthetic fertilisers as well as water resources (Paddock, 1970). Shiva (1989) showed that Green Revolution measures not only caused soil degradation and biodiversity losses but also widely eliminated traditional agriculture knowledge and farming practices.

These perspectives were complemented by a group of authors who saw the Green Revolution as a capitalist expansion strategy driven by industrial countries. Cleaver (1972) argued that the Green Revolution concept clearly was part of anti-communist

agendas and that it exported the free-market ideology to developing countries. This became apparent considering the World Bank's contributions to Green Revolution programmes which mainly benefited multinational corporations from industrial nations (Feder, 1976).

Two Green Revolutions that were broadly discussed in the literature are the cases of India and Southeast Asia. The Green Revolution in India was initiated during the 1960s by the Rockefeller Foundation, the Ford Foundation, and the Indian government and mainly included the application of high-yielding varieties of rice and wheat, chemical inputs, and electrically powered irrigation systems (Unger, 2014). In the following years, an improved growth rate of food-grain output was observed whereby wheat production increased from 50 million tonnes in 1950 to 95.1 million tonnes in 1968 (Bowonder, 1979). However, many critics noted that these interventions were accompanied by growing socio-economic inequalities and caused high levels of indebtedness among smallholder farmers (Dasgupta, 1977; Nair, 1979; Prahladachar, 1983; Nelson et al., 2019). The new technologies also led to the loss of indigenous seed varieties and the acidification of soils (Shiva, 1989). Patel (2013) pointed out that crop yield increases did not necessarily translate into food security and that the narrative of a successful Green Revolution was strategically established by the government to undermine land reform debates in India.

During the 1960s, the Green Revolution also got a foothold in Southeast Asia and particularly in the Philippines, where the International Rice Research Institute (IRRI) was initiated in 1960 with funding from the Ford Foundation and the Rockefeller Foundation (Chandler, 1992). In 1966, the IRRI released the high-yielding rice variety *IR8* which was soon introduced in many Southeast Asian countries along with synthetic inputs, irrigation systems, and new wheat varieties (Peng et al., 2010). After the introduction of these technologies, rice production in the Philippines increased from 1.97 tons per hectare in 1970 to 2.83 tons per hectare in 1985 (Estudillo & Otsuka, 2006). However, the growth rate in rice yields declined from the 1980s onwards due to pest infestations and the overexploitation of soil micronutrients (Pingali & Rosegrant, 1994; Hayami & Kickuchi, 1999; Peng et al., 2010). Like in India, the Asian Green Revolution was accompanied by growing economic inequalities as well

as several negative social, ecological and health impacts (Hazell, 2009; Jhamtani, 2009; Patel, 2013).

3.1.2 The New Green Revolution Concept and Its Critics

In response to the manifold points of criticism that were put forth against the early Green Revolution agenda, from the mid-1980s onwards, a number of actors began to advocate for an advancement of the original concept. These views contributed to the promotion of a New Green Revolution agenda.

The idea of a second Green Revolution was first introduced by Steinhart (1981) who discussed early scientific experiments with genetically modified (GM) seeds and saw biotechnology as a prospective key tool for future agricultural transformations. As biotechnology advancements were made, the significance of biotechnology became more prominent, with arguments that GM seeds not only allowed the production of more nutritious food at lower prices but also had positive environmental impacts since they required less farmland and smaller amounts of synthetic inputs (Evenson & Gollin; 2000, Davies; 2003; Borlaug & Dowswell, 2003). Pinstrup-Andersen and Hazell (1985) advocated that most adverse socioeconomic effects of the past Green Revolutions were not a result of the new technologies and hence could be rectified with adequate policy measures. With its new focus on eco-farming and low-energy farming systems, the Consultative Group on International Agricultural Research (CGIAR) could play a major role in the design of a more sustainable Green Revolution concept (Glaeser, 1987). Ecological sustainability was also emphasised by Conway (1997), who called for a *doubly green* revolution that targeted productivity increases as well as conservation improvements. He further outlined that smallholder farmers needed to be integrated more efficiently into future agricultural transformations.

However, these ideas of a New Green Revolution soon were accompanied by criticism. Patel (2013) demonstrated that although the New Green Revolution represented a shift from a geopolitical to a biopolitical framing, it still exhibited fundamental continuities with regard to capital accumulation, class struggles, and the dominant modes of governance. This view was shared by Holt-Giménez and Altieri (2012), who argued that the New Green Revolution was shaped by the agenda of the corporate food regime and that the selective inclusion of agro-ecological approaches

did not sufficiently modify the original core principles. A number of critics observed that the biotechnological innovations significantly contributed to the commodification of plant seeds and implied new environmental risks, such as genetic contamination (Kloppenburg, 1988; Otero & Pechlaner, 2005). Such aspects were complemented by several publications which found that female farmers often were most adversely affected by past agricultural transformations and that the issue of gender inequality was not sufficiently addressed in the New Green Revolution concept (Agarwal, 1992; Feldman & Welsh, 1995; Sobha, 2007; Kilby, 2019).

3.1.3 The Uptake of the Green Revolution in Africa

Given that many African countries still showed a high level of food insecurity at the turn of the 21st century, several experts have concluded that the first Green Revolution bypassed the African continent. This assumption can be traced back to Norman (1985), who noted that African food production remained static during the first Green Revolution. Sasson (2012) pointed out that the global food crisis in the early 2000s notably worsened the food situation in Africa. From 2005 onwards, a growing number of actors advocated for a new Green Revolution in Africa (Djurfeldt et al., 2005; Diao et al., 2008), suggesting that past experiences provided a promising basis to successfully adjust the general Green Revolution measures to the specific conditions in Africa. AGRA's founding president, Gary Toenniessen, saw the establishment of local, national and intergovernmental partnerships as a key factor to tackle these particular challenges and underlined that the initiation of AGRA was an important step for the future of agricultural transformation in Africa (Toenniessen, Adesina & de Vries, 2008).

3.2 Key Debates Around the Alliance for a Green Revolution in Africa

In order to explore the key debates around AGRA, the following paragraphs take a closer look at the literature that discusses AGRA's organisational characteristics, agenda, and achievements.

3.2.1 AGRA's Formation and Organisational Structure

According to its first annual report (AGRA, 2009), AGRA was established in 2006 as an African-based and African-led organisation with the aim of improving food security in African countries by catalysing an inclusive agricultural transformation. Several

critics point out that this Africa-centric self-description is misleading on various levels. Greenberg (2012), for example, describes that although AGRA's headquarters are based in Kenya, the organisation is officially registered as a non-profit organisation in the US and uses its offices in Nairobi mainly as an operating branch. AGRA's strong links to the US also become apparent when considering that it was originally initiated by the Rockefeller Foundation and the Gates Foundation and that its formation was strongly driven by the Rockefeller Foundation's president, Gordon Conway; the UN secretary-general, Kofi Annan; and the Gates Foundation (Moran, 2014). Holt-Giménez (2008) concludes that the 2006 *African Fertilizer Summit* in Abuja was used strategically by the Rockefeller Foundation and the New Partnership for Africa's Development (NEPAD)[12] to lay the ground for AGRA's future alliances. Shortly after this summit, the Rockefeller Foundation partnered with the Gates Foundation to officially launch AGRA. Together, the two foundations provided AGRA with an initial budget of $150 million (Holt-Giménez, 2008).

The influence of the Rockefeller Foundation and the Gates Foundation is also clear in AGRA's internal structure which, in the early years, mainly consisted of the boards of AGRA and ProAGRA[13] as well as AGRA's management staff. Daño (2007) demonstrates that the two initial boards of directors were dominated by leading figures of the Rockefeller Foundation and the Gates Foundation.[14] Moreover, she highlights that for its management team, AGRA primarily recruited staff members that had a background in the private sector and particularly in the field of biotechnology. That these kinds of affiliations still dominate becomes apparent in the case of AGRA's current president Agnes Kalibata, who not only is equipped with a far-reaching political

[12] The NEPAD is a pan-African programme for socio-economic development which was established by the African Union in 2001. NEPAD aims to address Africa's key development challenges through the eradication of poverty and food insecurity, the sustainable management of natural resources, the stimulation of economic growth and the fostering of good governance, among others (Ugwu & Odo, 2014).

[13] The *Programme for an Alliance for a Green Revolution in Africa* (ProAGRA) was established as a temporary body by the Rockefeller Foundation and the Gates Foundation to manage the early implementation of AGRA (Holt-Giménez, 2008).

[14] Among others, AGRA's initial board of directors consisted of *Raj Shah* (Director for Agricultural Development, Gates Foundation) as well as *Sylvia M. Matthews* (President of Global Development, Gates Foundation). *Gary Toenniessen* (Director of the Food Security Programme, Rockefeller Foundation) served as AGRA's president. Furthermore, ProAGRA was led by *Peter Matlon* (Director of the Africa Regional Programme, Rockefeller Foundation) and its board of directors included *Roy Steiner* (Senior Officer of the Global Development Programme, Gates Foundation) as well as *Nadya K. Shmavonian* (Vice-President of the Foundation Initiatives, Rockefeller Foundation).

network, but also holds close relations with several multinational corporations (Day, Canfield & Wallaia, 2020; Urhahn et al., 2021).

There remains considerable ambiguity regarding the nature of AGRA's organisational character. Although Chege (2019) and O'Sullivan (2013) describe AGRA as an agricultural think tank, the literature is mostly silent on this role.

3.2.2 AGRA's Agenda and Activities

In its 2019 annual report, AGRA (2020a) highlights that its agenda generally is designed in line with the objectives of the *Comprehensive Africa Agriculture Development Programme* (CAADP), the 2014 *Malabo Declaration*, and the *UN Sustainable Development Goals* (SDGs). The CAADP is a pan-African initiative which was established by the African Union (AU) and the NEPAD in 2003. It aims to foster economic growth and improve food security through agriculture-led development in African countries (Kolavalli et al., 2010). In 2014, the CAADP was complemented by the commitments of the *Malabo Declaration,* which included additional investments in agriculture and a doubling of agricultural productivity by 2025, among others (Sidler, 2017). However, at its core, AGRA's transformation concept mainly goes back to the Rockefeller Foundation's White Paper, *Africa's Turn: A New Green Revolution for the 21st Century* (Rockefeller Foundation, 2006). This document points out that the improvement of Africa's agricultural productivity is directly linked to an increase in the productivity of smallholder farmers. It also suggests that this New Green Revolution is composed of three layers. While the first stage prioritises the introduction of new seed varieties and the enhancement of scientific capacities, the second stage targets the establishment of better input techniques. This is followed by a third phase, which aims to improve off-farm systems and markets. Each of these stages includes a set of different measures that range from research, advisory and advocacy activities, to the provision of funding and the initiation of relevant partnerships (Toenniessen, Adesina & de Vries, 2008). According to Moran (2014), the additional focus on output markets significantly differs from past Green Revolutions, whose interventions mainly were limited to the input side.

3.2.2.1 AGRA's Introduction of Improved Seeds

Corresponding to the Rockefeller Foundation's White Paper, AGRA identified the establishment of high-yielding seed varieties as a key aspect for the improvement of Africa's agricultural productivity. Thus, between 2007 and 2017, AGRA carried out the *Programme for Africa's Seed Systems* (PASS). This was designed in close collaboration with the CGIAR and aimed to introduce 1,300 crop varieties of at least 10 staple crops in 17 African focus countries (Moyo et al., 2009).[15] The PASS included four sub-programmes: the *Agro-Dealer Development Programme* (ADP), the *Education for African Crop Improvement* (EACI), the *Fund for the Improvement and Adoption of African Crops* (FIAAC), and the *Seed Production for Africa* (SEPA) (AGRA, 2017a). These sub-programmes not only promoted the development of improved hybrid seed varieties but also provided funding opportunities for scientists and universities and addressed the lack of adequate distribution systems (see Fig. 2). According to AGRA (2017a), these steps were necessary to link the scientific research and breeding processes more directly to commercial seed distributors and eventually, to African smallholder farmers. To attract further investments from the private sector, AGRA advocated for a transformation of existing seed policies, whereby the establishment of seed-related intellectual property rights was a key objective (AGRA, 2017a). However, this agenda has been repeatedly criticised by experts on various levels. For instance, Greenberg (2012) demonstrates that AGRA's introduction of standardised hybrid seeds inevitably comes with an increase in monocultures and a narrowing of seed diversity. A number of critics have argued that AGRA's PASS did not contribute to the long-term objective of food security and that its technocratic character should have been diversified by a stronger integration of other stakeholders (Scoones & Thompson, 2011; Jones, 2015). Ignatova (2017) and Rock and Schurman (2020) illustrate that due to its advocacy activities for intellectual property rights over genetically engineered plants, AGRA can be understood as part of a broader alliance that paved the way for the introduction of GM seeds in Africa. Although AGRA so far has distanced itself from the use of GM seeds, it co-designed Ghana's Plant and

[15] It is important to note that the implementation of AGRA's programmes always is limited to certain focus countries. However, these have strongly varied over time. While the PASS originally included 13 target countries, it later was extended to 17 countries due to additional funding (Wellard et al., 2019). For its current programmes, AGRA lists the following 11 focus countries on its webpage: Burkina Faso, Ghana, Ethiopia, Kenya, Malawi, Mali, Mozambique, Nigeria, Rwanda, Tanzania, Uganda.

Fertiliser Act, 2010 (803), for example, which protects the rights of investors in plant breeding. One year later, it was extended by the Ghana Biosafety Act, 2011 (831), which allowed GM seeds into the country (Ignatova, 2017).

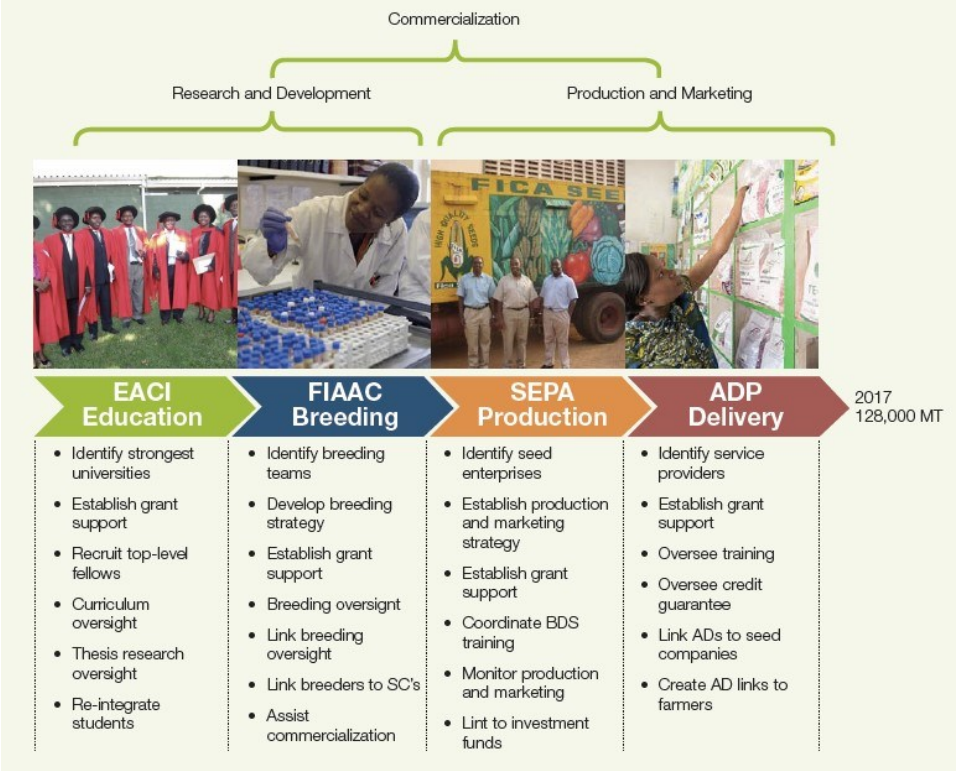

Fig. 2: The four sub-programmes of AGRA's Programme for Africa's Seed Systems (PASS) and their key activities.
Source: AGRA (2017a:6).

3.2.2.2 AGRA's Approach to Soil Fertility

Given that more than three-quarters of farmland in sub-Saharan Africa lacks essential plant nutrients, AGRA identified the issue of soil fertility as a key factor for a successful African agricultural transformation (Toenniessen, Adesina & de Vries, 2008). AGRA thus carried out a *Soil Health Programme* (SHP) between 2008 and 2019 (see Fig. 3). One core element was the *Integrated Soil Fertility Management* (ISFM) approach that included a number of organic soil improvement techniques suitable for African smallholder farmers (AGRA, 2019a). Yet AGRA (2019a) also highlighted that Africa's depleted soils could only be sufficiently enhanced if such organic techniques were complemented with synthetic inputs. Thus, aligned to the 2006 *Abuja Declaration on Fertilizer for an African Green Revolution*, AGRA's SHP aimed to increase the consumption of fertilisers in its focus countries from 8 kilograms per hectare to 50 kilograms by 2015 (AGRA, 2019a). To achieve this objective, AGRA strategically

improved access to synthetic inputs in rural areas by expanding local agro-dealer networks and linking the distributors more closely to national and international fertiliser producers.

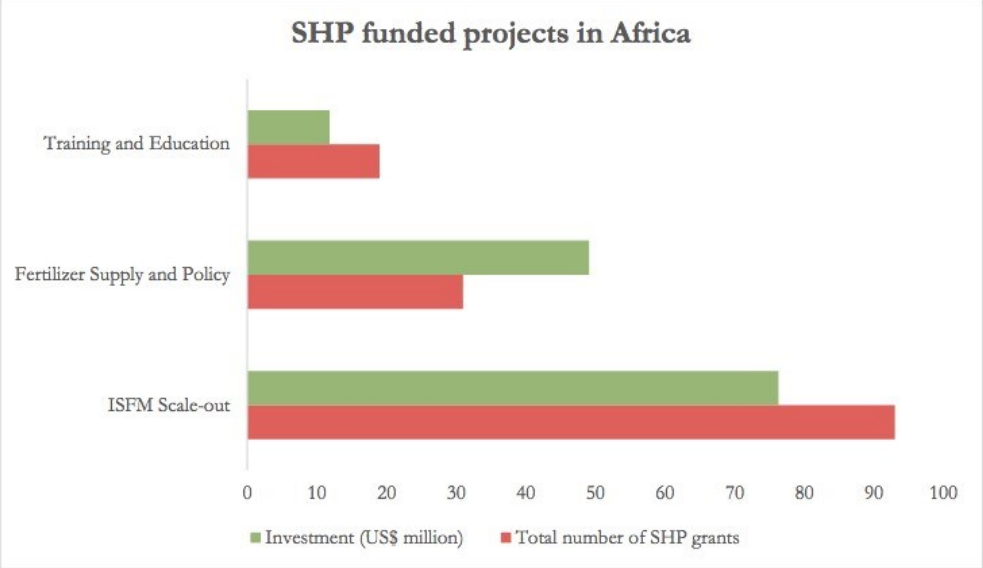

Fig. 3: AGRA's investments during the Soil Health Programme (SHP).
Source: Zeila et al. (2020:35, Figure 1).

Another crucial part of the SHP was the formation of the African Fertiliser and Agribusiness Partnership (AFAP), which represents the interests of the fertiliser industry in political processes and fosters local agribusinesses by providing credit guarantees for investments (AGRA, 2019a). Swanepoel (2016) argues that AGRA's SHP still is an input-intensive approach and thus negatively impacts ecological systems and human health. The SHP also makes smallholder farmers gradually dependent on expensive inputs and hence creates a poverty trap when the expected yield increase fails to materialise (Mkindi et al., 2020). Several critics emphasise that AGRA's interventions in the fertiliser system imply only minor benefits for local agribusinesses and rather play into the hands of multinational agrochemical corporations (ACB, 2014; Martin-Prével, Mousseau & Mittal, 2016).

3.2.2.3 AGRA's Improvement of Markets

In addition to high-yielding seeds and soil fertility, AGRA sees several market-related aspects as crucial for agricultural transformation (Toenniessen, Adesina & de Vries, 2008). A key challenge identified is the creation of better financial access mechanisms

to allow smallholder farmers to obtain loans for new input technologies more easily (Rockefeller Foundation, 2006). Thus, in 2014, AGRA and the Mastercard Foundation initiated the *Financial Inclusion for Smallholder Farmers in Africa Project* (FISFAP), which mainly provides credit guarantees to facilitate loans for smallholder farmers from commercial banks (Genesis Analytics, 2017). The FISFAP promotes chain finance approaches[16] and develops digital finance services which are specially geared to the needs of rural farmers (Reinsch, 2021).

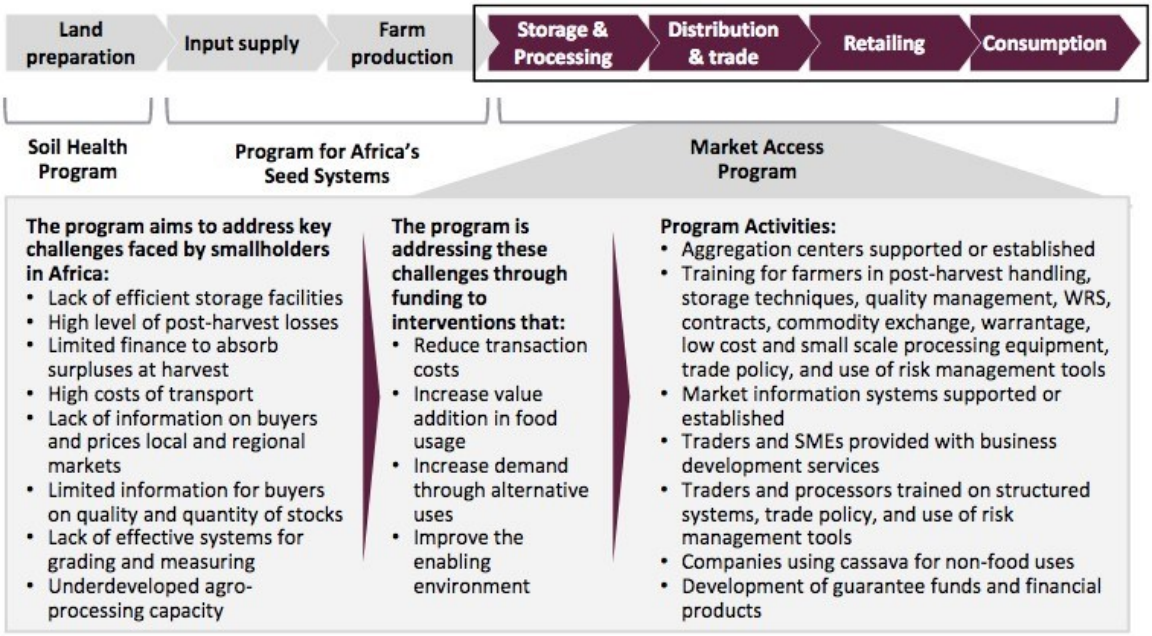

Fig. 4: Shows the objectives and activities of AGRA's Market Access Programme (MAP).
Source: Dalberg (2015:3, Figure 2).

In order to strengthen input and output markets, AGRA also carried out the *Market Access Programme* (MAP) between 2009 and 2019 (Genesis Analytics, 2019) (see Fig. 4). The MAP mainly included broad investments in the development of local agribusiness infrastructure to reduce the transaction costs for inputs (van Leerzem, 2015). Due to the high level of post-harvest losses, the programme also supported storage services and related technologies (Dalberg, 2015). It aimed to help smallholder farmers to sell their surpluses for higher profits by establishing more direct

[16] In value chain finance approaches, loans and credit are not only provided by banks and financial institutions but also by actors that are directly involved in the particular value chain. This, for example, applies to agribusiness companies which often supply African smallholder farmers with short-term loans in rural areas (Chalmers et al., 2005).

value chain linkages and digital trading platforms (Genesis Analytics, 2019). These aspects of the MAP were complemented by broad advocacy activities for the opening of national markets, for which AGRA entered several public-private partnerships (PPP) such as the Farm to Market Alliance (FTMA) (Thorpe & Guijt, 2018). Critiquing these activities, Mkindi et al. (2020) highlight that the integration of smallholder farmers into the global supply chain leads to a number of new vulnerabilities which increase their risk of indebtedness. Moreover, due to the MAP's close collaboration with farmer organisations, this mainly benefited larger-scale commercial food producers and widely excluded small-scale subsistence farmers and female farmers (Wise, 2020a). Patel (2013) observes that AGRA's market-led approach clearly expedites the neoliberalisation of the African agricultural sector at a meso level, where the private sector increasingly adopts the role of the state.

3.2.2.4 The Partnership for Inclusive Agricultural Transformation in Africa

Percy et al. (2020) explain that AGRA undertook a far-reaching restructuring in 2017. This was accompanied by the formulation of a new strategic four-year plan and included a shift away from the implementation of vertically designed programmes (such as the PASS) towards taking a more catalysing role in promoting an inclusive agricultural transformation in collaboration with governments and other key partners (AGRA, 2020c). In the same year, AGRA launched the *Partnership for Inclusive Agricultural Transformation in Africa* (PIATA), which consisted of the Gates Foundation, the Rockefeller Foundation and the USAID, the United Kingdom Department for International Development (UK DFID), and the German Federal Ministry for Economic Cooperation and Development (BMZ). This partnership aims to overcome systemic challenges that have supposedly hindered agricultural transformation in Africa by engaging in advocacy and policy capacity building activities, designing flagship investment projects, and stimulating the initiation of PPPs (AGRA, 2018) (see Fig. 5).

	Policy and State Capability	System Development	Partnership
Objectives	Working with governments to strengthen execution capacity while enhancing the transparency, accountability systems and policy environment for increased public and private sector investment in agriculture	Building downstream delivery systems closer to smallholder farmers while providing support to local private sector to scale technologies and service that deliver better productivity and incomes	Facilitating the alignment between government priorities and private sector interests: improving integration and coordination, which lead to investments beneficial to smallholder farmers
Activity Focus Areas	Develop and operationalize national agriculture investment plans Micro and Macro policy and regulatory reform Implementation of national sector strategies and investment plans Intra and Inter-ministerial coordination Mutual accountability mechanisms	Seed Systems Soil health and fertilizer systems Input distribution systems Extension systems Market systems Financial services Cross cutting: Gender and ICT4AG	Mobilizing inclusive investments in Agriculture Creating a private sector led leadership agenda Build partnerships with leading private sector champions to leverage the entire ecosystem and build partnerships around knowledge and intelligence sharing
Investment Tools	Staff time, Grants, TA, Consultancies, Convening/Meetings, AGRF	Consortia grants, staff time, Grants (standalone), TA, Consultancies, Convening/Meetings	Staff time, Grants, TA, Consultancies, Convenings/ Meetings/AGRF

Fig. 5: Shows the three main intervention areas of AGRA's Partnership for Inclusive Agricultural Transformation in Africa (PIATA).
Source: AGRA (2020b:8, Table 1).

AGRA's updated agenda also includes a number of readjustments. The empowerment of marginalised groups such as women and youths, for example, is explicitly outlined as a key priority for the first time (Percy et al., 2020). Recognising the increased risks of climate change shocks, the PIATA also promotes relevant adaptation measures such as climate-smart agricultural approaches (KIT, 2020). Although these latest shifts in AGRA's agenda have been noted by several authors (Gengenbach et al., 2017; Alhassan, 2019; Mkindi et al., 2020; Wise, 2020a), they have not been discussed in the literature in detail. Wise (2020b) points out that this lack of analysis is a result of AGRA not publishing any robust outcome data since its 2016 progress report (AGRA, 2017b) (see Section 3.2.4). A number of internal evaluations, however, suggest the failure of AGRA's new strategy since it has not led to an improvement in yields, income or food security (Wise, 2021a).

3.2.3 AGRA's Network

Although the PIATA represents a key element of AGRA's current agenda, AGRA's network is characterised by a high number of additional partnerships and informal collaborations. This is closely linked to AGRA's African Green Revolution Forum (AGRF), an annual event that brings together key actors from the farming sector as well as from the political and economic spheres (AGRA, 2020a).

One aspect that received attention in the literature is the role of AGRA's funding partners and their potential influence on AGRA's agenda. Several critics point out that AGRA's activities are deeply shaped by the specific development paradigms of the Rockefeller Foundation and the Gates Foundation and that both foundations have contributed significantly to the design and governance of AGRA (Daño, 2007; Moran, 2014). Martin-Prével, Mousseau and Mittal (2016) explain that several of AGRA's programmes are co-financed by governmental agencies from the US and Europe and conclude that AGRA's funding structure is accompanied by political and economic interests from Global North countries.

AGRA's network also exhibits a number of relevant actors from the scientific community. One key partner is the CGIAR, which was initiated by the Rockefeller Foundation in the 1970s to provide scientific support for the Green Revolution in Asia (Daño, 2007). AGRA also partners with several African academic institutions, such as the University of Ghana and the University of KwaZulu-Natal (South Africa), and facilitates academic collaborations with universities from the US and Europe (Moyo et al., 2009). AGRA Watch (2020) further emphasises the important role of the CAS, which is funded by the Gates Foundation. The CAS provides training courses in science-based communication and regularly influences agribusiness and biotechnology debates through its fellows.

Another group of actors strongly represented in AGRA's network are governmental and intergovernmental organisations. While at a national level, AGRA mainly collaborates with agriculture-related ministries and government-run research institutes, it has also entered into several partnerships with important transnational protagonists (Moyo et al., 2009). NEPAD and the FAO, for example, see AGRA's activities as a crucial contribution to the objectives of the CAADP (Daño, 2007). AGRA also regularly partners with the World Bank, the African Development Bank (AfDB) and the International Fund for Agricultural Development (IFAD) (Greenberg, 2012; Wise, 2020a).

A similar observation can be made for actors from the private sector, which include regional agribusiness companies as well as multinational corporations such as Bayer, Dupont, Syngenta and Yara (Martin-Prével, Mousseau & Mittal, 2016). These

multinational corporations often occupy important roles in large PPP projects, such as the Southern Agricultural Corridor of Tanzania (SAGCOT). In many cases, these companies also possess direct access to other key actors of the network, like the CGIAR and the Gates Foundation (Daño, 2007). Thus, it can be concluded that AGRA's agenda is closely intertwined with the interests of multinational corporations (Holt-Giménez, 2008; Bassey, 2012; Martin-Prével, Mousseau & Mittal, 2016; Mkindi et al., 2020).

AGRA further collaborates with a variety of non-governmental organisations (NGOs) and non-profit organisations (NPOs) from African and non-African countries. These include humanitarian organisations, agriculture-related associations, and lobby groups. The US-based and pro-market NGO, Citizens Network for Foreign Affairs (CNFA),[17] for example, managed the implementation of several programmes in AGRA's focus countries (Patel, 2013). Other NGOs and NPOs in AGRA's network have strong linkages to multinational corporations and play important roles in the advocacy field. This applies especially to the African Seeds Trade Association (AFSTA), the AFAP and the FTMA (Daño, 2007; Swanepoel, 2016).

It is interesting to note that despite the broad discussion of AGRA's partnerships and collaborations, the literature so far lacks a detailed analysis of AGRA's network.

3.2.4 AGRA's Achievements

As Urhahn et al. (2021) point out, the evaluation of AGRA's achievements is highly dependent on the publishing of relevant outcome data. For its early programmes, AGRA released a progress report in 2016 covering 2007–2016 (AGRA, 2017b). In this report, AGRA summarises its accomplishments with regard to the PASS, the SHP and the MAP, highlighting its funding support for 151 PhDs in crop breeding, with 562 new seed varieties released, and 381 of these seed varieties used commercially. AGRA also supported 112 seed companies and trained 39,934 agro-dealers, which led to the production of 602,736 million tons of seed and the distribution of 1,5 million tons of synthetic fertilisers. Training in ISFM practices was provided to 1,86 million farmers.

[17] The CNFA today operates under the name *Cultivating New Frontiers in Agriculture*.

AGRA states that due to its activities, 600,361 million tons of commodity were accumulated, and 686,967 million tons were sold. In critiquing this report, Wise (2020a) emphasises that it lacks relevant details that explain how the outcomes are related to the objectives of food security and poverty reduction. He concludes that based on the progress report, AGRA's achievements cannot be evaluated sufficiently.

This lack of reliable outcome data becomes apparent when considering that AGRA has not published a comprehensive progress report since 2016 (Wise, 2020a).[18] In response to this gap, researchers from Tufts University performed an independent impact analysis of AGRA's achievements in 2020 using national-level data from 13 AGRA focus countries. The study found no evidence that food security or income amongst smallholder farmers were significantly improved but observed that the number of people suffering from hunger increased by 30 percent in these countries (Mkindi et al., 2020). With an average annual productivity growth rate of 1,5%, the rise in productivity remained similar to the time before AGRA's activities. These findings are supported by Wise (2021a), who analysed AGRA's internal evaluations and noted that they indicated similar shortcomings.

3.3 The Role of Think Tanks in Modern Governance Systems

By reviewing the existing literature, the following paragraphs outline the main characteristics of think tanks, their role in modern governance processes, and the rising importance of environmentally-related think tanks.

3.3.1 Defining a Think Tank

The term *think tank* is typically used as an umbrella term that can describe very different organisations, such as interest and lobby groups or research institutes (Weaver & McGann, 2017; McGann, 2016; Fraussen & Halpin, 2017; Ruser, 2018; Pautz, 2020). To separate think tanks more distinctly from other organisations, traditional think tank concepts apply central organisational attributes for their categorisation. One of the most common definitions states that think tanks are non-profit organisations which have organisational and financial autonomy from

[18] In July 2021, AGRA published a report with provisional results for the period 2017–2021 (AGRA, 2021). However, after analysing this report, Wise (2021b) noted that it mainly addressed AGRA's recent strategic plan and again lacked robust outcome data.

governments and place a strong focus on applied research. In this way, they are seen to act as neutral bridges between the scientific field and political decision-makers (Weaver, 1989; Stone, 1996; Weaver & McGann, 2017; Pautz, 2020). However, Hauck (2017) points out that today's think tanks are often in resource-dependent relationships with other organisations and thus lack autonomy, even if they are not financed by governments. She argues that the attribute-based categories are idealised conceptualisations and that the definition of think tanks needs to be separated from the criteria of autonomy. The aspect of autonomy also is addressed by Medvetz (2010; 2012), who introduces the idea that think tanks are organisations that typically operate between radial categories which mainly centre around four fields of power: *political access*, *public visibility*, *resource acquisition* and *research credibility*. Interventions into these four fields of power are essential for the success of think tanks since they guarantee access to decision-making processes, adequate economic resources, intellectual credibility, and improved reputation (Medvetz, 2010). Considering these aspects, the author concludes that think tanks are not a distinct type of organisation but rather are particular organisational actors of vague networks that are interspersed by protagonists of politics, academia, media and business. Although this radial concept allows the nature of current think tanks to be better captured, Hauck (2017) emphasises that it does not present a conclusive definition of think tanks.

Despite the lack of an adequate definition, the nature of think tanks can be further characterised by reviewing their key functions. The traditional activities of think tanks include research, analysis, publishing, and advisory tasks, among others (Weaver, 1989; McGann, 2016; Ruser, 2018; McGann & Whelan, 2020; Pautz, 2020). However, due to increasing competition in the marketplace of ideas, a growing number of think tanks also are engaged in advocacy activities and forms of strategic communication in order to proactively influence the public and political opinion (Ruser, 2018). Frost and Vogel (2007:8) emphasise that it is misleading to see these organisations as neutral experts since "the function of think tanks is not passive transfer of knowledge but active transformation".

Recent literature highlights further focus areas which have become important features of think tanks. For instance, McGann and Whelan (2020) describe how the priority of think tanks has gradually shifted from domestic to global policy issues and that they

thus aim to cultivate multi-layered networks which allow them to operate transnationally. Several authors point out that think tanks increasingly make use of new technologies such as digital media to advance their analytical methods and their forms of strategic communication (Hauck, 2017; McGann & Whelan, 2020).

Given these various activities and characteristics, the literature classifies think tanks in a number of ideal-typical categories. Weaver's (1989) typology suggests that most think tanks either can be categorised as *academic think tanks*, *contract research think tanks*, or *advocacy think tanks*. While *academic think tanks* generally act in the sense of non-partisan research institutes and focus on a neutral analysis of information, *contract research think tanks* primarily conduct prearranged research for governmental agencies. Weaver (1989) characterises *advocacy think tanks* as organisations that operate in value-driven networks and proactively influence the public policy sphere using a wide range of advocacy and media strategies. While Weaver's designations are helpful, these ideal types of think tanks are increasingly challenged by hybrid organisations such as research-oriented interest groups or for-profit consulting agencies (McGann & Whelan, 2020). This view is shared by Hauck (2017), who emphasises the emergence of *Think & Do Tanks* which not only design policy concepts but also implement interventions and programmes.

3.3.2 The Role of Think Tanks in Modern Governance Processes

De Prado (2007) suggests that the significance of think tanks for governance processes is closely related to the emergence of multi-level governance systems after the Second World War. According to the author, this can be seen as a reaction to globalisation, which forced national governments to restructure their governance approaches. Traditional governance systems were predominantly organised along a vertical governance dimension characterised by the hierarchy of governmental institutions that structure the governance regime from national to local levels (from top to bottom) (Cairney, Heikkila & Wood, 2019). Power in multi-level governance systems, however, is no longer limited to the vertical dimension but also spreads horizontally between governmental and non-governmental actors in the form of dynamic collaborations (Cairney, Heikkila & Wood, 2019; Yi et al., 2019) (see Fig. 6). In this sense, the shift from traditional to multi-level governance systems has provided

new access points for a wide range of civil society actors such as NGOs, academic institutions, lobby groups or think tanks (de Prado, 2007).

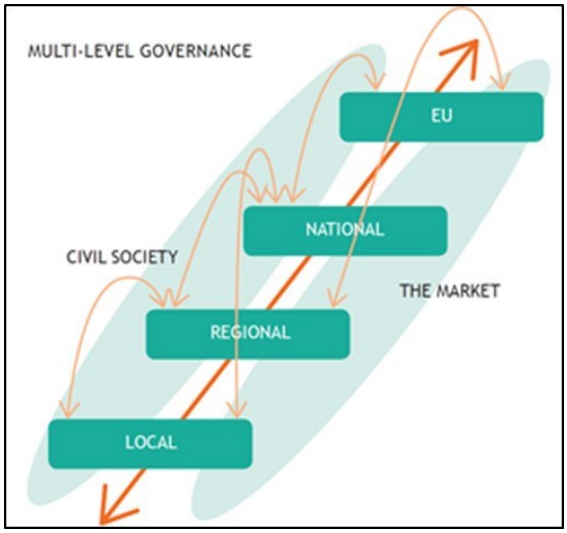

Fig. 6: A schematic overview of multi-level governance processes (using the example of the European Union).
Source: Panagakos & Psarafatis (2017).

Due to their goals and activities, think tanks play a specific role in governance interactions. First, their expertise qualifies them to advise decision-makers about particular issues and to transfer agendas from horizontal to vertical governance dimensions (McGann, 2016; Pautz, 2020). Moreover, since think tanks aim to shape the outcome of policy processes, they have a strong interest to cultivate close relationships to policy circles and thus function as an important bridge between civil society and government (McGann, 2016; Pautz, 2020). Their status as independent civil society organisations also enables think tanks to freely operate as intermediaries between different horizontal and vertical actors and to establish cross-sectoral initiatives such as issue networks (McGann & Whelan, 2020). This is why Garsten and Sörbom (2014) further describe the behaviour of think tanks as taking a *network governance* approach. In view of these aspects, it can be concluded that think tanks have the potential to shape modern governance processes on content-related and cross-organisational levels as well as by means of personal relations.

While the reviewed literature mainly focuses on governance systems in the Global North, the relation between think tanks and governance in the Global South is

characterised by additional issues. McGann and Whelan (2020) argue that due to the lack of strong civil society, think tanks in the Global South regularly suffer from insufficient funding, limited access to decision-makers, and poor network structures. In addition, their dependence on Global North donors frequently leads to conflicts of interest that preclude Global South think tanks from establishing their own agendas and networks (Mbadlanyana, Sibalukhulu & Cilliers, 2011; McGann, Signé & Muyangwa, 2017). Despite these flaws, many still suggest that Global South think tanks are an important tool to enhance existing governance systems since they have the potential to identify key challenges and to strengthen the voice of the Global South in the global community (Mbadlanyana, Sibalukhulu & Cilliers, 2011; Handy, 2020; McGann & Whelan, 2020).

3.3.3 The Rise of Environmentally-related Think Tanks

Due to increasing global governance issues, a growing diversification of the current think tank landscape can be observed. McGann and Whelan (2020) find that many large think tank organisations have become *multi-issue think tanks* which address the interrelated issues of global governance by means of broad research agendas. However, these are accompanied by a rising number of *single-issue think tanks* that primarily focus on specific key areas. Within this constellation, the authors identify environmentally-related and climate change-related think tanks as a new priority. Ruser (2018) suggests that one reason for this development is the highly complex nature of environmental and climate change issues, which are often characterised by a *double inaccessibility*. This is because many environmental and climate change phenomena cannot be experienced directly and only become evident by an analysis of data. The methods applied to collect and interpret this data, however, mostly require expert knowledge and hence are not accessible for actors outside of the research community. Since many governments lack the required research capacities, the necessary knowledge has to be obtained via external experts (Ruser, 2018). Steiner (2015) further explains that environmental phenomena frequently exceed the sphere of national responsibility and thus necessitate new forms of global governance in which think tanks act as important intermediaries. Thus, current environmental governance systems provide various access points for the activities of think tanks. Environmentally-related think tanks strategically use these access points for the

promotion of their particular interests, as evidenced by the emergence of the US climate change denial movement and the preparation of the *Paris Agreement*.

3.3.3.1 The US Climate Change Denial Movement

Several authors point out that the US climate change denial movement serves as a prime example for the shaping of environmental governance processes by think tanks (Jacques, Dunlap & Freeman, 2008; Brulle, 2014; Ruser, 2018). In reaction to the growing significance of the environmental movement during the 1980s, a number of US corporations (such as ExxonMobil) established a network of conservative think tanks, foundations and media outlets to promote anti-environmental lobby activities (Jacques, Dunlap & Freeman, 2008; Bonds, 2016). Dunlap and McCright (2010) note that from this point on, several US think tanks (such as the conservative and pro-market, Heartland Institute) aimed to undermine the existence of climate change by strategically questioning its scientific evidence. In addition to releasing more than 100 climate change denial publications, these think tanks also influenced public and political opinion with the help of expert interviews, media campaigns and policy proposals (Dunlap & Jacques, 2013; Dunlap & McCright, 2015; Bonds, 2016). Ruser (2018) concludes that the activities of these advocacy think tanks strongly contributed to the emergence of the climate change denial movement which eventually reached its peak during the presidency of Donald Trump, who dismantled more than 100 environmental regulations (Popovich, Albeck-Ripka & Pierre-Louis, 2020) and resigned the US from the *Paris Agreement* (Farand, 2019).

3.3.3.2 The Paris Agreement

While think tanks in the climate change denial movement primarily followed an anti-environmental agenda, the 2015 *Paris Agreement* demonstrates that they can also significantly contribute to pro-environmental endeavours. The preparation of this agreement was strongly influenced by the activities of the Agreement for Climate Transformation 2015 (ACT 2015) group which was led by the World Resources Institute (WRI) think tank (Steiner, 2015). Based on the findings of a global survey, ACT 2015 took a first step in bridging the gap between environmental and economic interest groups by strategically linking the fight against climate change with the green growth concept (de Moor, Morena & Comby, 2017). Subsequently, the consortium provided political decision-makers with guidance documents that recommended legal

elements for the later treaty text (Steiner, 2015). According to Morena (2017), the ACT 2015 group thus contributed a number of key aspects to the final agreement, ranging from the bottom-up approach of self-determined national commitments to the formulation of the long-term adaptation and mitigation goals. Yet, the author emphasises that the ACT 2015 group was part of a broader network of funders and organisations that supported a market-friendly version of the agreement with a bottom-up approach and soft compliance mechanisms. In contrast, the Global Call for Climate Action (GCCA) initiative advocated for a top-down approach with stronger and legally-binding commitments (Morena, 2017).

3.4 Summary

This chapter discussed the main elements of the Green Revolution concept and the reasons for its uptake in Africa. It demonstrated that due to its social, economic and ecological impacts, the Green Revolution approach is highly contested. The chapter also described AGRA's organisational structure, the key aspects of its agenda, and its activities. It showed that AGRA's vision of an agricultural transformation is primarily based on technological and market-led solutions.

The literature review further explained the characteristics of think tanks and their role in modern governance systems. It illustrated that think tanks shape environmental governance on various levels and often act on behalf of broader networks. The results of the research are reported in the following chapter.

Chapter 4: Results

This chapter presents the findings of this study and is structured along the eight key aspects of the research. These include (1) *AGRA's general agenda* and (2) *organisational structure* as well as AGRA's approach to (3) *food security*, (4) *poverty reduction*, (5) *ecological sustainability*, and (6) the *inclusion of smallholder farmers*. A focus is also placed on (7) *AGRA's partnerships* and (8) *AGRA's strategic communication*. Brief literature reviews are included to link the findings more closely with the existing debates.

4.1 AGRA's General Agenda and Organisational Structure

Evaluating AGRA's general agenda and organisational structure was identified as a central issue. The results presented are based largely on the key informant interviews.

As explained in section 2.2.2, the AGRA-related informants are named as follows:

- Informant_ACB: African Centre for Biodiversity
- Informant_FAO: UN Food and Agriculture Organization
- Informant_IATP: Institute for Agriculture & Trade Policy
- Informant_MMP: Malabo Montpellier Panel
- Informant_RF: Rockefeller Foundation
- Informant_UT: University of Texas
- Informant_1: African Agricultural Research Organisation (anonymous)
- Informant_2: African Food Sovereignty Organisation (anonymous)

The think tank related key informants are presented as follows:

- Informants_FANRPAN: Food, Agriculture and Natural Resources Policy Analysis Network
- Informant_IGD: Institute for Global Dialogue
- Informant_OI: Oakland Institute
- Informant_WRI: World Resources Institute
- Informant_3: German environmentally-related think tank (anonymous)

4.1.1 AGRA's General Agenda

All of the key informants agreed that AGRA's agenda generally aims to initiate an agricultural transformation in Africa using measures such as new inputs, policy reforms, and market-related interventions. However, while some key informants saw AGRA's approach as a direct continuation of past Green Revolution methods, others understood it as a reconditioned concept that is in line with current international development goals. Against this background, *Informant_UT* (Online Interview, 22.06.2021) pointed out that AGRA's agenda is:

> straightforwardly an attempt to use technologies and politics of the mid-twentieth century in a bid to increase food production and yields in sub-Saharan Africa … The vision for AGRA is a technocratic, capital-driven attempt to achieve goals like 'feed the continent' by following development paths that have been demonstrably a failure in places like India.

In contrast, *Informant_FAO* (Online Interview, 09.07.2021) highlighted that the agenda of AGRA and its partners was designed in line with the objectives of recent international agreements such as the 2014 *Malabo Declaration*, the *Agenda 2063* of the AU, and the UN's *SDGs*. Thus, it can be concluded that there is a significant dissent in respect of the general nature of AGRA's agenda.

This dissent also can be observed with regard to the historical legitimisation of AGRA and the question of whether the first Green Revolution bypassed the African continent. As described in Chapter 3, this assumption was one of the key factors behind the recent uptake of the Green Revolution in Africa (see Section 3.1.3). A number of key informants believed that the current transformation was necessary since African farmers lacked the technology and economic and political framework to carry out self-sufficient and profitable agriculture. *Informant_RF* (Online Interview, 22.06.2021), for example, stated:

> The reality is that when you go to some of these rural areas, you have somebody out there with a hoe hoeing a piece of ground. That technology has not changed in 2000 years … That is not an enjoyable and profitable approach to agriculture … So we have to find better ways to grow food.

While this line of argument corresponds with the narrative that Africa "missed out" on the technological benefits of the earlier Green Revolution, several key informants

contested this view. According to these respondents, the first Green Revolution did not bypass Africa but failed to materialise due to its inadequate measures which did not address the specific conditions of African agriculture. The narrative that Africa "missed out" is thus seen as part of a strategy to legitimise new Green Revolution undertakings such as AGRA.

This debate is also closely linked to the question of whether AGRA's general agenda sufficiently takes into account the complex environmental, political, economic and cultural characteristics of African countries. The necessity to address these conditions was emphasised by all informants. However, a clear discrepancy existed in their responses with regard to AGRA's implementation of this objective.

Several key informants remarked that AGRA's agenda and programmes were adequately designed to tackle the specific agricultural challenges in African countries. *Informant_MMP* (Online Interview, 07.07.2021), for example, pointed out that AGRA primarily aims to improve the situation of African smallholder farmers since they are the key to a successful African agricultural transformation. This informant also underlined that AGRA uses a wide variety of appropriate measures that range from new inputs and the building of scientific capacities to the improvement of political decision-making processes and the strengthening of markets. This view, however, was countered by informants from the African Centre for Biodiversity, the Institute for Agriculture & Trade Policy, the University of Texas, and others who argued that AGRA's approach lacked the required diversity and did not follow a development path that sufficiently acknowledges the specific experience of African smallholder farmers (Informant_ACB, Online Interview, 18.05.2021; Informant_IATP, Online Interview, 19.05.2021; Informant_UT, Online Interview, 22.06.2021; Informant_2, Online Interview, 24.05.2021).

Informant_ACB (Online Interview, 18.05.2021), for example, stated that:

> Africa's agricultural systems are diverse, and one-size-fits-all technological packages cannot work for Africa … The Green Revolution agenda being pushed onto Africa is not based on African experiences … They [AGRA] need to recognise smallholder farmers' autonomy on seed and agricultural farming systems and that local solutions come from smallholder farmers because they

> are the ones that feed us, know the challenges, and they are the ones who have to drive the agenda.

4.1.2 AGRA's Organisational Structure

When asked about AGRA's organisational structure and its linkages to actors from the Global North, several informants highlighted that this constellation had no undermining effects on the organisation's autonomy. *Informant_RF* (Online Interview, 22.06.2021) observed that:

> we all live in a world where there are power dynamics. I would say the AGRA board is dominated by Africans who have very strong opinions and they are not just people who do what you tell them to do … I think from a governance point of view, AGRA's board has been reflective of African desires and values. 90% of AGRA's staff are African. Having funders is the same dynamic as in every development project because funding happens from outside, and so you have to mitigate that. I think it is a real issue, but you mitigate it by creating strong African voices who have the ability to influence what happens.

Informant_MMP (Online Interview, 07.07.2021) argued that food security clearly is a global issue and that AGRA's board addresses this global nature by deliberately bringing together experts from different African and non-African backgrounds.

Other informants – notably from the African Centre for Biodiversity, the Institute for Agriculture & Trade Policy, and the University of Texas – pointed out that AGRA's organisational structure comes with a significant imbalance of power which directly affects its agenda (Informant_ACB, Online Interview, 18.05.2021; Informant_IATP, Online Interview, 19.05.2021; Informant_UT, Online Interview, 22.06.2021). *Informant_1* (Online Interview, 14.06.2021) likewise explained:

> Who gave the mandates? … The mandate came from the AGRA board. The mandate does not come from the African Union Commission. The mandate does not have a political clutch … AGRA reports to its own board, and the board reports to themselves. That is the flaw in the institutional architecture of AGRA. It is whoever puts the money on the table that they report to. So the ultimate authority would be the donors who also sit on the board.

Informant_ACB (Online Interview, 18.05.2021), *Informant_IATP* (Online Interview, 19.05.2021), and *Informant_2* (Online Interview, 24.05.2021) believed that AGRA's organisational structure is deeply characterised by a top-down approach which not

only creates a lack of accountability and transparency but also exhibits neo-colonial tendencies due to its Global North bias in decision-making.

The informants described AGRA using a number of different, generalised terms such as *international non-governmental organisation* or *technical assistance agency*. When asked if they thought AGRA could be classified as a think tank, several key informants stated that they were not convinced by this label, explaining that in their view, AGRA's operational character extended beyond that of traditional think tanks. These same key informants did acknowledge, however, that AGRA was not limited to operational dimensions and performed classical think tank activities such as research, advisory and advocacy tasks. Although AGRA's research activities were questioned by some of the key informants, AGRA's online *Resource Library* shows that the organisation has released an increasing number of publications in recent years. Among others, the library includes 16 issues of the monthly *Food Security Monitor* and eight *Africa Agriculture Status Reports* (AASR) as well as a number of policy briefs, white papers, and additional studies. According to the key informants, advisory and advocacy activities took place on various levels that ranged from policy capacity building measures to the fields of trade facilitation, tax systems, and risk management. *Informant_FAO* (Online Interview, 09.07.2021) further underlined that AGRA not only aimed to influence key political leaders but also focused on high-level technical decision-makers. These observations were complemented by the view of *Informant_MMP* (Online Interview, 07.07.2021), who pointed out that AGRA could be understood as a think tank in the sense that it analyses a wide range of information which it subsequently uses for its publications as well as to design its programmes, advocacy activities and multistakeholder partnerships. The informant highlighted that AGRA:

> puts out knowledge products like the Africa Agriculture Status Reports … So, I think AGRA drives thinking but in addition to the research side also provides a good and strong conduit for advocacy, engaging with the private sector, engaging with governments, engaging with civil society partners, and sometimes even engaging with donors both domestic and foreign (Informant_MMP, Online Interview, 07.07.2021).

It was apparent that the majority of the informants did not see AGRA as a classical think tank organisation due to its strong operational character. However, given AGRA's

combination of research, analysis, advocacy and implementation activities and its role in multistakeholder partnerships, it showed a number of key attributes which the literature has identified as characteristics of more recent hybrid forms of think tank organisations such as *Think & Do Tanks* (Hauck, 2017; McGann & Whelan, 2020). This observation is in line with those of several think tank related key informants who emphasised that today's think tanks are not confined to the traditional set of research and advisory activities. According to *Informant_IGD* (Online Interview, 10.09.2021), this applies especially to think tanks in Africa:

> I think in the African context we actually need think tanks to be more doers … I think if you can get think tanks to basically be part of the implementation of programmes on the ground you have a better opportunity for them to actually learn on the job … We need to understand better what the challenges are, we need to understand better what policy interventions are needed to actually improve their [people's] livelihoods rather than coming from the top and imposing certain models.

4.2 AGRA and Food Security

The improvement of food security in African countries was identified as one of AGRA's main objectives. Thus, the following paragraphs summarise the key informants' observations regarding AGRA's food security activities, beginning with a brief discussion of the relevant debates in the literature.

4.2.1 Key Debates Around the Concept of Food Security

A first definition of food security was introduced during the 1974 *World Food Conference*, which was initiated in reaction to the global food crisis in the early 1970s. The according UN report provided the following formulation: "Availability at all times of adequate world food supplies of basic food stuffs to sustain the steady expansion of food consumption and to offset fluctuations in production and prices" (UN, 1975:14). While this early definition focused on the supply and steady availability of food, Sen (1981) suggested that reducing malnutrition not only depended on increased food production but also on other factors, such as an adequate access to the available food. Thus, in the mid-1990s, the FAO (1996) established a new definition which stated that food security is achieved "when all people at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life". As Dube (2014) explains, this definition

sufficiently addresses the multidimensional nature of food security by complementing *food availability* with *food access*, *food utilisation* and the *stability* of the food system (see Fig. 7).

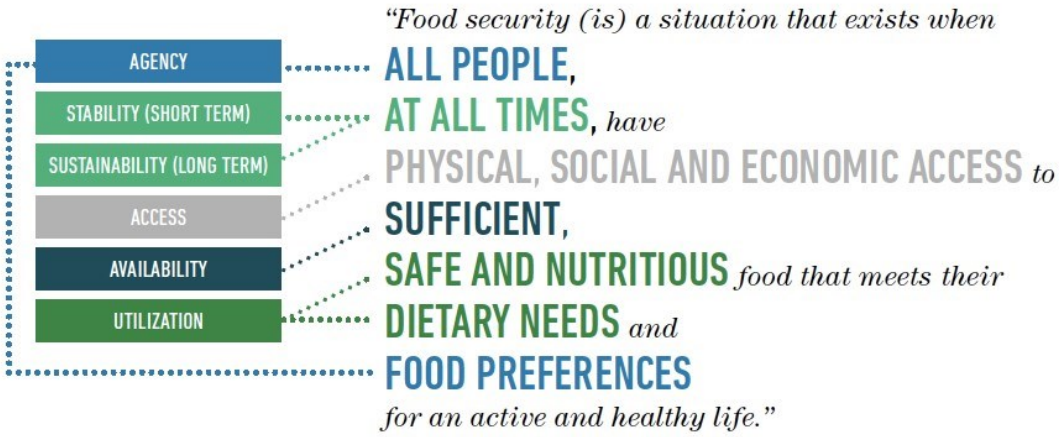

Fig. 7: The six dimensions of food security, as identified by the HLPE.
Source: HLPE (2020:10, Figure 1).

According to the FAO (2006), the dimension of *food availability* implies that domestic production and imports provide sufficient quantities of food and food of appropriate quality. *Food accessibility* means that individuals possess the adequate resources to acquire food for a nutritious diet. This involves not only financial means but also legal and political entitlements, as well as the freedom to acquire food according to socio-cultural preferences. The dimension of *food utilisation* highlights the importance of non-food factors – such as clean water, sanitation and health care – for the nutritional well-being of people. To reach an optimal level of food utilisation in developing countries, education was identified as a key element (Boadi et al., 2005). These food security criteria are complemented by the dimension of *food system stability*, which implies that food availability, food accessibility and food utilisation are ensured at all times. This especially applies to food systems that are vulnerable to sudden shocks (such as climate-induced crop failures) or to cyclical events of seasonal food insecurity (Webb & Rogers, 2003).

With the factors of *agency* and *sustainability*, the High-Level Panel of Experts on Food Security and Nutrition (HLPE) recently added two further dimensions to the existing food security concept. While *agency* refers to the capacity of individuals to decide on

their preferred food and to engage in the shaping of food production and distribution processes, *sustainability* takes into account that food systems need to be designed in a way that does not compromise the bases of ecological systems (HLPE, 2020). Such perspectives also have to factor in that food insecurity exists on different scales, from the individual and the household level to the national and global context. In many cases, this leads to unexpected vulnerabilities due to the complex interlinkages between individual and systemic food insecurity factors (Page, 2013).

Hlophe-Ginindza and Mpandeli (2020) observe that in the context of Africa, the issue of food security is closely related to the large number of rural smallholder farmers, with 75% of those affected by food insecurity belonging to this group. While their limitations with regard to technologies and farm land often undermine their effort to carry out sufficient subsistence agriculture, their lack of financial means and mobility also prevents these farmers from acquiring additional food (Hlophe-Ginindza & Mpandeli, 2020). The authors further emphasise that smallholder farmers' long-term production capacity is a crucial factor to meet rising food demands, which are closely connected to the rapid population growth in African countries.

4.2.2 AGRA's Approach to Food Security

In its 2017 annual report, AGRA stated that it aimed to improve the food security of at least 30 million African smallholder farmer households in the five years to follow (AGRA, 2018). When asked if this objective was achieved, all key informants agreed that AGRA had failed to meet this target. However, contrary opinions existed regarding the reasons for this shortcoming. Some informants pointed out that the target should not be understood as a committable objective but rather as an ambitious reference point which was set to initiate an ongoing development and learning process. According to *Informant_MMP* (Online Interview, 07.07.2021), for example: "The target of 30 million [smallholder farmers] was not achieved, but it was a good marker to lead, to say 'let's do this' … Things have been achieved and the work does not stop now." *Informant_FAO* (Online Interview, 09.07.2021) further underlined that the lack of success was a result of external factors beyond AGRA's control, noting that:

> AGRA might have its own issues, but for the most part a lot of the lack of progress on many of those targets are external drivers which AGRA has very little control

> over. Within that context I do not think AGRA or any [other] organisation is on track … For example, COVID-19 has not helped to make progress on meeting any of those targets and has set them back by many years.

In contrast, other informants explained that AGRA not only failed to achieve its own objectives but negatively impacted the food situation in its focus countries. This was pointed out by *Informant_2* (Online Interview, 24.05.2021), who stated:

> In all of the measures, there is no evidence of a 100% increase in productivity. Actually, governments have spent a lot of money to subsidise some favoured crops, mainly maize … [But] there is no evidence of improved food security. The data says there is a 31% increase in the number of undernourished people in AGRA's countries. It resulted in the erosion of local varieties, and the environmental impacts are also huge ... They say they are successful, but what we see is very bad.

A similar variance of opinions was observed regarding the questions as to what extent shortcomings were linked to AGRA's agenda and whether AGRA's approach had the potential to improve the food security of African smallholder farmers in the future. In this context, several informants underlined that African agriculture and food systems are highly diverse and that their transformation thus requires a long-term approach which flexibly addresses the different technical, political and economic issues. That AGRA's agenda is based on such a flexible and long-term approach was noted by *Informant_RF* (Online Interview, 22.06.2021), who described the following evolution:

> You do not just want to have small pilot programmes. You want to achieve scale. AGRA went through a bit of revolution where success was all about immediate impact on the ground to recognising much more of a food systems approach … So, it shifted to more leverage and building the capacity of African governments to make better decisions to prioritise agriculture.

The importance of this recent shift was pointed out by *Informant_FAO* (Online Interview, 09.07.2021), who highlighted that AGRA not only enhances the different levels of food security by influencing political and technical decision-makers but also by stimulating investments from the private sector. However, the views of these respondents were countered by other informants who saw AGRA's shortcoming as clear evidence for the inadequacy of its agenda. *Informant_IATP* (Online Interview, 19.05.2021), for instance, argued:

> I do not think you can say [AGRA's] failure to produce a productivity revolution is because of a lack of funding. I think it is much more because of the failed model – or as they like to call it, a 'theory of change'. The theory of change being fairly straightforward, and I would say traditional to the point of being discredited now by many decades of experience in agricultural development. The theory of change is access to new technology like commercial seeds and fertilisers which are actually very old technologies – even if the seeds are new, the approach is the original Green Revolution which did the same things in India 50 years ago.

Informant_ACB (Online Interview, 18.05.2021) emphasised that AGRA's approach still prioritises the production side and does not sufficiently take into account other dimensions of food security:

> In terms of hunger, malnutrition, and even poverty, unequal distribution definitely is a main issue because you find regions where there is a lot of food production, and you find regions where there is scarcity, and people in that region are suffering to get the basic calories just to get by … So, the aspect of unequal distribution is one aspect, and I think it also is leading back to [the question], 'What is it exactly that the agricultural system needs?' Does it need more investment into hybrids or chemical fertilisers? Or does it need to address challenges with regard to the distribution of food … access to this food and the like?

In sum, half of those interviewed deemed AGRA's approach appropriate to improve the food security of African smallholder farmers in the long term, with AGRA's recent strategic shift considered as a key step. However, the other half of those interviewed viewed AGRA's agenda as an inadequate concept due to its focus on outdated Green Revolution methods and its failure to address important food security dimensions such as food accessibility.

4.3 AGRA and Poverty Reduction

The following paragraphs present the findings regarding poverty reduction, another of AGRA's key objectives. The section begins with a brief review of the literature and subsequently reports the views of the key informants.

4.3.1 Key Debates Around the Concept of Poverty Reduction

Although the literature generally exhibits a wide range of different poverty concepts (Addae-Korankye, 2014), most authors agree that poverty is a complex and multicausal phenomena (Rippin, 2009; Menyuko, 2011; Kneebone & Reeves, 2016;

Nishimwe-Niyimbanira, 2020). Gassner et al. (2019:309) define poverty as “a multidimensional concept encompassing low income and consumption, low educational achievement, poor health and nutritional outcomes, lack of access to basic services, and a hazardous living environment”. This definition is based on the findings of a poverty report by the World Bank (2018) which introduced the poverty line of US$1.90 per day as a common indicator for extreme poverty. The usage of this indicator is closely linked to the traditional idea that poverty can be best measured by available income. This is why poverty in the 20th century mainly was seen as a result of insufficient finance and material resources (Nishimwe-Niyimbanira, 2020). However, from the 1990s onwards, the unidimensional poverty concept was increasingly criticised and additional poverty dimensions were suggested. For instance, Yahie (1993) argued that poverty is driven not only by a lack of income but also by a set of further structural and transitional causes. While the structural dimension mainly includes permanent factors – such as locational disadvantages, insufficient education and limited access to job opportunities – the transitional dimension implies temporary impacts; for instance, price changes and rising unemployment rates due to economic or environmental shocks. The case of South Africa’s black population, which was widely denied access to education, land, markets and infrastructure during the apartheid regime, demonstrates that discrimination and unequal power structures are further key factors that induce poverty (May & Norton, 1997).

Although poverty is a global phenomenon that occurs in many countries, the region of sub-Saharan Africa still shows an above-average poverty rate (World Bank, 2018). Gassner et al. (2019) highlight that poverty reduction in Africa is characterised by specific challenges since a majority of those affected by poverty include smallholder farmers. Limitations such as scarce farm resources, a lack of irrigation systems and small farmlands often make agriculture a high-risk livelihood strategy for these farmers (Gassner et al., 2019). Thus, the authors argue that the eradication of poverty in African countries is inextricably linked with an agricultural transformation that addresses the particular needs of smallholder farmers in a flexible and inclusive manner.

4.3.2 AGRA's Approach to Poverty Reduction

All informants agreed that poverty reduction measures in African countries needed to focus on the agriculture sector and smallholder farmers in particular. The importance of agriculture for poverty eradication was highlighted by *Informant_FAO* (Online Interview, 09.07.2021), who stated:

> We know that agriculture is definitely one of the sectors that provides one of the most inclusive tools to get out of poverty. We know that and there is evidence to show that. No country in the world has developed without developing its agricultural sector … It happens by a couple of things. Firstly, creating income opportunities for farmers which is basically linking them to markets and increasing the productivity but also the returns from investments that they are making. Secondly, by creating jobs within the sector. The sector becomes more productive and the different segments along the food value chains are well integrated … That is how poverty is reduced.

Informant_1 (Online Interview, 14.06.2021) emphasised the crucial role of smallholder farmers within this development scenario when he observed:

> First and foremost, 80% of the food we eat on this continent comes from smallholder farmers and it is largely from the informal sector … The statistics [show] that up to 80% of the population in Africa is in agro-business or agro-related economic sectors, as compared to developed economies where it is less than 4%. What does that mean? It means that your development initiative should focus on the agro-sector. If you want to change livelihoods you must then concentrate on agriculture because that is one sector that purchases 80% of the workforce … If you want to deal with poverty reduction … you must look at the smallholder farmers.

When questioned whether AGRA's market-led approach was adequate to efficiently address the poverty issues of African smallholder farmers, the informants' answers differed significantly. Several informants held the view that AGRA's focus on productivity increases, coupled with its activities to strengthen the agro-business sector and integrate African smallholder farmers more directly into the markets, was an efficient way to reduce poverty. *Informant_RF*, for example, outlined that in the case of African smallholder farmers, the building of wealth and capacities is largely dependent on the production and selling of surpluses. According to the informant, AGRA potently contributes to both dimensions due to its interlinked interventions for both inputs and outputs (Informant_RF, Online Interview, 22.06.2021). The informant

from the Malabo Montpellier Panel remarked that AGRA's market-led approach was the most adequate strategy to help people out of poverty, stating:

> Making promise to markets, I think, still serves as the best and most buyable pathway to prosperity. Why? Because markets determine price and price is a signal wrapped in an incentive. You want the right incentives for farmers to direct their efforts into strategy … If you want to maximise returns from the assets that you have – be it land, time or money – then you want to know that whatever you direct your resources to is giving you maximum return. And the best way to do that is tuning into the frequency of the markets (Informant_MMP, Online Interview, 07.07.2021).

Informant_MMP (Online Interview, 07.07.2021) further argued that market-led approaches address the issue of poverty in a more sustainable manner since they aim to stimulate prosperity, stating:

> I think it is also important to state that if we keep looking at agriculture as a means to reduce poverty, we will not succeed. We really need to see agri-food as a means or pathway to prosperity. Focusing on prosperity is a lot more lasting and sustainable than when you are looking at reducing poverty, [because in the latter case,] people are still poor, they are just less poor … And prosperity is not just about how much money you have. It is the capabilities that you now possess, meaning you can be prosperous in the agri-food sector, you can move out of the agri-food sector and be prosperous in any other sector.

These views were countered by other informants who saw AGRA's approach as inadequate since it comes along with a set of inherent problems. According to the informant from the Institute for Agriculture & Trade Policy, a key issue is that in many cases, the costs for new inputs exceed the gains which smallholder farmers generate from the enhanced production methods:

> The reason that it [AGRA's approach] is an inappropriate strategy for small-scale farmers, generally and particularly in Africa, is that the overall majority of them are growing using their own seeds and growing with very limited costs of production. So, what AGRA finds over and over is that the costs of those new inputs are exceeding the productivity gains that come from using them … Even with the subsidies, they often see that the productivity of small-scale farmers is so limited and the money they can make from selling the produce on the market is so limited that it is not worth it (Informant_IATP, Online Interview, 19.05.2021).

Informant_ACB (Online Interview, 18.05.2021) highlighted that in the free market, smallholder farmers face a number of unequal power structures that increase rather than decrease their poverty risk, stating:

> The challenge with integrating smallholder farmers into global agricultural economies is that this global market is already captured by a few players … For example, in Tanzania alone, almost 60% of the market shares for seeds belong to the multinational companies. You sort of bring them into a space that is very unequal and where they are not going to benefit from this system.

This view was shared by the informant from the University of Texas, who explained how the existing free-market mechanisms disadvantage African smallholder farmers and mainly benefit large-scale multinational corporations:

> The reason you might think that [the integration of smallholder farmers into the global economy] is a good idea is because it could be that the access to world market prices might give them a higher price than they are able to get at the local market … But the fact remains that first of all the infrastructure for those kinds of exchanges are expensive and in large parts underdeveloped. The second is that it is entirely hostage to exchange rates … When that exchange rate falls in any number of IMF [International Monetary Fund] evaluations that have happened in the past couple of decades, then the big beneficiary is certainly not the farmer … The big winner is the purchaser of these commodities on the international markets (Informant_UT, Online Interview, 22.06.2021).

In sum, half of those interviewed saw AGRA's market-led approach as an adequate strategy to reduce the poverty of smallholder farmers due to its interlinked interventions on the input and output side as well as its potential to stimulate prosperity. However, the same number of respondents argued that AGRA's approach failed to improve the poverty situation of African smallholder farmers since the interventions did not lead to additional gains. Existing free-market mechanisms were seen to disadvantage smallholder farmers on various levels, thereby clearly increasing their poverty risk.

4.4 AGRA and Ecological Sustainability

In addition to food security and poverty reduction, ecological sustainability features prominently in AGRA's agenda. The following section reviews the relationship between ecological sustainability and agriculture and subsequently presents the relevant findings of the key informants.

4.4.1 Key Debates Around Agriculture and Ecological Sustainability

One of the first publications that outlined the complex relationship between modern agriculture and ecological sustainability was the *Brundtland Report*, which was published by the United Nations World Commission on Environment and Development (UNWCED) in 1987 (UNWCED, 1987). This report highlights that modern agriculture significantly impacts the environment on various levels and that the aim of a future global sustainable development thus directly depends on the establishment of ecologically sustainable agricultural approaches. One key issue is increasing soil degradation, which is driven by soil tillage practices and the use of synthetic fertilisers (DeWitt, 2009).[19] Agriculture-related land conversions and deforestations thus place ecological systems worldwide under further pressure. Benton et al. (2021) point out that the widely applied approach of monoculture farming not only goes hand in hand with the increased consumption of water resources and synthetic inputs but also is a key driver of biodiversity loss. This especially applies to cases where monocultures create a long-term habitat uniformity which lacks the required natural resources to support the existence of diverse plant and animal species. The agricultural sector and the related industrial food system also significantly contribute to the acceleration of climate change due to their large dependence on fossil fuels and their high emission of organic methane and carbon dioxide (Lynch et al., 2021). In addition, the nitrogen-phosphorus imbalance caused by synthetic inputs potentially reduces the soil's capacity to fix carbon from human-induced CO_2 emissions (Peñuelas et al., 2013).

Considering that agriculture generally is closely linked to different economic and social dimensions, the FAO underlines that sustainable agriculture approaches need to address ecological challenges in a holistic way and proposes five key principles: 1) improving efficiency in the use of resources; 2) conserving, protecting and enhancing natural ecosystems; 3) improving rural livelihoods, equity and social well-being; 4) fostering the resilience of people, communities, and ecosystems; and 5) strengthening

[19] As outlined by Zingore et al. (2015), tillage practices break the physical soil structure and thus increase the rate of water- and wind-induced soil erosion. Moreover, they also disrupt the biological and chemical interactions which are important for the health of soils. Following this observation, Peñuelas et al. (2013) highlight that due to such degraded soils, farmers in many cases draw on synthetic fertilisers to provide the plants with the necessary nutrients, such as nitrogen, phosphorus and potassium. However, according to the authors the use of synthetic fertilisers not only leads to the acidification of soils but also negatively impacts the surrounding environment due to the high rate of chemical runoff.

good and responsible governance (FAO, 2014). Oberč and Schnell (2020) explain how the multidimensional understanding of sustainable agriculture today gets reflected in a wide range of different approaches. These range from conservation agriculture to permaculture and regenerative agriculture.

One concept that recently has gained particular prominence in the scientific and political discourse is the approach of agro-ecology (Wezel et al., 2020). On a basic level, agro-ecology can be understood as a set of farming practices which systematically apply “ecological concepts and principles to the design and management of sustainable agroecosystems” (Gliessman, 2000:13). A key principle of agro-ecology is the usage of diversification and recycling strategies (for instance, mixed cropping and livestock integration) to amplify the positive effects of natural agroecosystem services, which in turn lead to an ecologically sustainable productivity increase (Altieri, 2016). As a scientific discipline and a broader social movement, agro-ecology also focuses on the creation of local market opportunities, the co-production of knowledge and the strengthening of gender equity (Dumont et al., 2016). Agro-ecology thus not only explores new ways to holistically redefine the relationship between agriculture and society, but also provides a sustainable alternative to the industrial farming and food system (Silici, 2014).

In 2019, the HLPE identified 13 key agro-ecological principles and five related transition levels for an ecologically, socially and economically sustainable agricultural transformation (HLPE, 2019) (see Fig. 8). Mousseau (2015) shows that with its multidimensional set of measures, the agro-ecological approach is particularly suited to the African context since it can be flexibly adapted to the diverse social, economic and environmental conditions of local smallholder farmers.

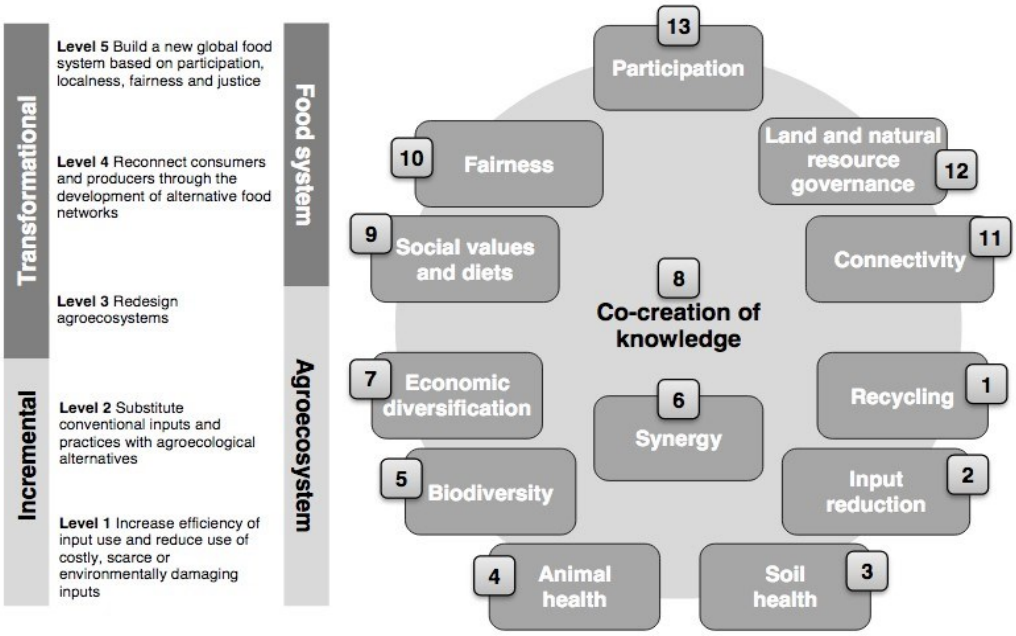

Fig. 8: Shows the 13 key agro-ecological principles and the 5 levels of transition towards a sustainable food system as identified by the HLPE.
Source: HLPE (2019:51, Figure 3).

4.4.2 AGRA's Approach to Ecological Sustainability

Some informants held the view that AGRA's approach addressed the issue of ecological sustainability on different levels. *Informant_MMP* noted that AGRA and its partners not only support relevant farming practices but also focus on the food production and distribution system, stating:

> The CGIAR is committed to climate-smart agricultural practices and eco-efficient agriculture systems. So, for example, the CGIAR … focusses on deploying cutting edge science and technology to ensure that … producing food does not increase the agri-food sector's contribution to emissions, but at the same time also identifying the means to sequestrate carbon in the soil. One example is the brachiaria animal feed which has very long roots and so brachiaria [helps to] … store carbon in the soil and to reduce land degradation. … AGRA identifies cutting-edge best science and then through partners invests in extension systems, training systems and small- and medium-scale enterprises that promote these technologies and systems (Informant_MMP, Online Interview, 07.07.2021).

The informant from the Rockefeller Foundation observed that the improvement of soil health and the development of climate-resilient seeds are two of AGRA's key objectives. The respondent explained that AGRA's recent shift in emphasis towards the transformation of the broader food system was accompanied by a stronger

incorporation of ecologically sustainable approaches such as regenerative and circular agriculture (Informant_RF, Online Interview, 22.06.2021).

However, most key informants disagreed with this characterisation of AGRA's agenda and believed its programmes to negatively impact the environment on various levels. *Informant_IATP*, for example, emphasised that AGRA's approach mainly facilitates monoculture farming and leads to additional land conversions:

> What AGRA claims it is doing (and in some cases, it may actually be doing it) is promoting agricultural intensification. So, improving the productivity of existing land without bringing new land into production which has a lot of ecological costs in a lot of countries. They would do it through a programme known as Integrated Soil Fertility Management (ISFM). In theory, that involves a real focus on improving soil quality through a wide variety of measures, many of which are ecological and associated with organic agriculture, like increasing the organic matter in soil, crop rotations, things like that – only using inorganic fertilisers as an amendment to assist in that process of building soil fertility. In practice, all of these subsidies subsidise monocultures of maize fed by inorganic fertilisers … So, what you see with this heavy emphasis on one crop ... and the heavy subsidies to grow maize … is an increase in monocropping, which is not good for the soil. [You also see] an increase on a reliance on inorganic fertilisers, which by itself can cause the soil to become more acidic and less fertile. The other piece that is problematic in this is that all the incentives to grow maize encourage the farmers to both shift land out of other crops … [and] to bring new land into production (Informant_IATP, Online Interview, 19.05.2021).

A similar view was expressed by *Informant_2* (Online Interview, 24.05.2021), who pointed out how AGRA's market-led approach is directly linked to a reduction of crop diversity and hence to a higher exposure to future climate shocks, stating:

> I think [the market dependency] has a dire impact on so many levels. First and foremost, the focus will be on a few crops which are selected to be high value crops in terms of the market. That will have an impact on diversity – the kind of food that people produce. When farmers decrease the diversity of plants or the diversity of seeds that they plant, it makes them less resilient to climate change.

The informant from the African Centre for Biodiversity observed that AGRA's introduction of hybrid seeds has already led to a great loss of genetic diversity due to the wide replacement of local seed varieties. Given this loss of diversity, the informant concluded that AGRA's approach lacks the potential to build ecologically sustainable farming systems in the long term (Informant_ACB, Online Interview, 18.05.2021).

Unlike their approaches to food security and poverty reduction, AGRA's approach to ecological sustainability was considered as inadequate by a majority of the key informants. Although some informants held the view that AGRA promotes ecological sustainability through its application of the ISFM approach and climate-smart agriculture technologies, most respondents argued that AGRA's overall agenda does not sufficiently contribute to the establishment of ecologically sustainable farming systems. Monoculture, soil acidification, biodiversity loss and insufficient adaption to potential climate shocks were identified as key issues.

4.5 AGRA and Inclusion

AGRA's self-description as a "farmer-centred organisation" (AGRA, 2017b) indicates that the inclusion of smallholder farmers is a main priority in its agenda. Moreover, the debates around food security, poverty reduction and sustainable agriculture show that inclusion, participation and bottom-up methods are regularly considered as key mechanisms for overcoming existing challenges. The following section summarises the key informants' views regarding AGRA's approach to inclusion.

4.5.1 AGRA's Inclusion of Smallholder Farmers

All of the informants agreed that smallholder farmers are a main reference point of AGRA's agenda. Yet, a clear disagreement existed regarding the effectiveness of AGRA's inclusive character. Several informants emphasised that the activities of AGRA and its partners aim to create an inclusive environment which supports smallholder farmers on various levels. The informant from the Malabo Montpellier Panel observed the following:

> At the core, the primary focus of AGRA is the smallholder farmer. AGRA engages with the smallholder farmers across Africa through partners. So, AGRA does not do direct interventions, they have partners that they identify and who are grant recipients or technology and intellectual partners … who work with the smallholder farmers (Informant_MMP, Online Interview, 07.07.2021).

Informant_FAO (Online Interview, 09.07.2021) and *Informant_1* (Online Interview, 14.06.2021) both held the view that AGRA not only empowers smallholder farmers by providing them with access to inputs and markets but also by promoting inclusive approaches, such as the integrated finance mechanism. However, several informants

emphasised that these activities are not necessarily equivalent to an inclusive approach since smallholder farmers are widely excluded from the design of AGRA's programmes and the relevant decision-making processes. The informant from the Institute for Agriculture & Trade Policy stated:

> I think if you look at their reports it would be hard to find much evidence that farmers were involved in designing any of the programmes that they are implementing. There is almost no indication that they are farmer-centred in that way. The way they would call themselves farmer-centred is that that is who they are trying to reach. So, their beneficiaries, the participants in their training sessions … that involves farmers, but it is certainly not designed by farmers (Informant_IATP, Online Interview, 19.05.2021).

Given this lack of participation at a conceptual and decision-making level, these informants saw AGRA's agenda as clearly characterised by a top-down approach that fails to address the particular views of smallholder farmers. *Informant_ACB* (Online Interview, 18.05.2021) explained:

> I think it is more top-down because most of these programmes are developed without [smallholder farmers] … These are not programmes that are owned by the farmers themselves, so autonomy of the farmers is not there … It [AGRA's approach] does not really touch on the local solutions that the farmers themselves would put out in these contexts. [Thus, it is] definitely top-down in the way that they involve the farmers.

4.5.2 AGRA's Approach to Gender

Although the discrimination of female farmers has received wide attention in the literature (Agarwal, 1992; Feldman & Welsh, 1995; Sobha, 2007; Kilby, 2019) and was identified as a key point in AGRA's recent agenda (Percy et al., 2020), only two informants made reference to gender when asked about AGRA's approach to inclusion.

The informant from the Food and Agriculture Organization highlighted that AGRA and its partners act in line with the common global development goals and thus aim to improve the situation of marginalised groups:

> Based on the work we [the FAO] have done with them, I believe that we all subscribe to this global commitment which has a very clear focus on meeting the needs of poor people, including marginalised groups like women and youth. We

> all share those big strategic objectives (Informant_FAO, Online Interview, 09.07.2021).

By contrast, *Informant_UT* pointed out that in many cases, AGRA's approach reproduced historical patriarchal structures and believed that there was a lack of evidence about the ways AGRA's current activities improve the situation of female farmers, stating:

> [AGRA's approach] is importantly patriarchal … In conversations I had with the Gates Foundation about their investment in AGRA, … I was surfacing things to them that were well known at the time, which is that after the 2008 financial crisis, it was clear that men were returning to farmlands driven by the recession in the cities. When they arrived, they were greeted by incentives to engage in these high-input and potentially high-profit agricultural initiatives. That meant that women were squeezed out of the decision-making process. Women's labour was still used on the farm, but women's decision-making authorities were negated. Essentially, what these technologies have done is succeed in reaffirming patriarchal control of agriculture in the household in cases that the Gates Foundation certainly knew about. They admitted to it and said they were going to do a better job, but I am not sure how they have done that (Informant_UT, Online Interview, 22.06.2021).

In summary, it is clear that informants saw AGRA as a farmer-centred organisation in the sense that its general agenda mainly focuses on smallholder farmers. However, beyond that, AGRA's approach mostly exhibits exclusive characteristics due to the lack of inclusion of smallholder farmers in the design of programmes and decision-making processes. Although gender equity is highlighted as a key objective by AGRA, it remains unclear how AGRA's current activities actually address the structural and non-structural forms of discrimination of female farmers.

4.6 AGRA's Partnerships

The agenda of think tanks and similar organisations is often closely linked to the particular network in which they operate (Ruser, 2018). Thus, an analysis of AGRA's partnerships and collaborations was performed in order to explore the characteristics of its network in more detail. The key results of this analysis are summarised in the following paragraphs. A list of the relevant acronyms used in the network graphs is provided in Appendix 4.

4.6.1 The General Characteristics of AGRA's Network

As part of the analysis of AGRA's network, a total number of 445 actors and 2,498 relationships between those actors were identified. The majority of these actors and relationships were detected in selected publications and reports, as well as on the webpages of AGRA and its partner organisations. An analysis of AGRA's Twitter account revealed 11 network actors, with the most notable findings including the Nelson Mandela Foundation (NMF), the PeerCorps Trust Fund (PCTF), and the US-based marketing agency, Entertainment 258 (E258) (see App. 3). These accounts act as important multipliers of AGRA's social media content. Additionally, 54 network actors were discovered during the review of AGRA's current board members and their organisational affiliations. Among the identified institutions were the African Philanthropy Forum (APF), the Atlantic Council (ACo), the Brenthurst Foundation (BreF), the Donald Danforth Plant Science Center (DDPSC), the International Monetary Fund (IMF), the International Seed Federation (ISF), the Malabo Montpellier Panel (MMP), the Tony Elumelu Foundation (TEF), and the Welthungerhilfe (WHH). Affiliations also existed with a number of investment firms and corporations from the biotechnology, fertiliser, and food sector, such as the Capital Group (CaG), Chr. Hansen (Hansen), Danone, the Fairfax Africa Fund (FAF), Feronia, PAI Partners (PAIP), Paine Schwartz Partners (PSP), Sasol and Solevo. The key informants contributed no additional actors to the network since all partner organisations of AGRA mentioned in the interviews were already part of the data collection.

Key characteristics of AGRA's partnerships become apparent in the network graph which includes all 445 actors and their relationships (see Fig. 9). This graph demonstrates that AGRA's network exhibits a strong intersectoral character, with a large number of interlinked partners from different fields such as governmental

agencies, research institutes, foundations, intergovernmental organisations, and banks and corporations. Due to the position and size of the nodes, the network actors can be divided roughly into two groups. While a majority of the partners possess a weak interconnectedness and only occupy peripheral network positions, the network's core is defined by a cluster of larger nodes with a high density of relationships. This cluster is situated in close proximity to AGRA and includes organisations such as the Gates Foundation, the Rockefeller Foundation, the USAID, and the World Bank. The overall network structure thus displays a clear asymmetry which indicates a general power imbalance between the peripherally and centrally located actors. The observed asymmetry suggests that the network is mainly dominated by a closely linked and intersectoral group of key actors which are able to shape the network dynamics by influencing the flow of information as well as that of financial and personnel resources. This finding is closely connected to the selection criteria which were applied during the data collection where nodes and edges were only considered relevant for the network if they were linked to a flow of information, money or personnel (see Sections 2.3.2.2 and 2.3.2.3). Thus, the size of a node not only indicates the interconnectedness of the actor but also its access to and its control of such resources.

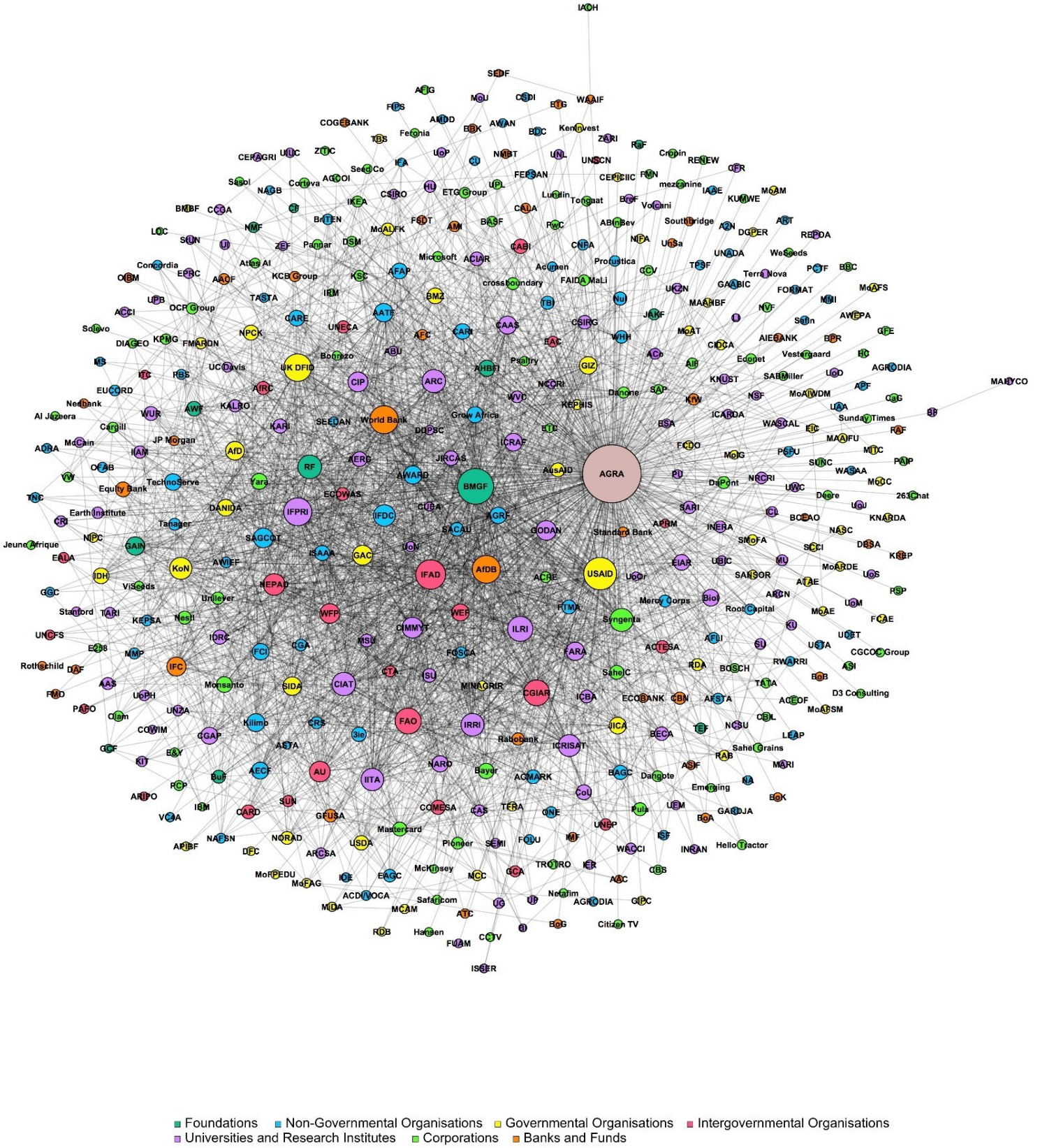

Fig. 9: AGRA's complete network. The node's size indicates the actor's influence within the network and the colour, its organisational attribute.

4.6.2 AGRA's Key Partners

In order to identify the key actors within AGRA's network, a graph of AGRA's official partners was created (see Fig. 10). This graph includes the 137 organisations which are listed as current partners on AGRA's webpage. The group that is numerically most strongly represented in this network are corporations, with multinational concerns occupying a dominant role. In addition to large chemical companies (for instance, BASF, Bayer, Corteva, Dangote, Syngenta and Yara), AGRA also partners with a number of corporations from the food industry, such as Anheuser-Busch InBev (ABInBev), Nestlé, and Psaltry International (Psaltry). Moreover, the network encompasses several technology and finance companies, including Atlas AI, Bonrezo, John Deere (Deere), Mastercard, Microsoft and Pula.

A second dominant category of actors is the group of governmental organisations. This group contains a particularly high number of government-affiliated development agencies. The latter organisations are mainly financed by governments from European and North American countries and include the Danish International Development Agency (DANIDA), the German Development Cooperation (GIZ), the Global Affairs Canada (GAC), the Norwegian Agency for Development Cooperation (NORAD), the Swedish International Development Agency (SIDA), the UK DFID and the USAID. Furthermore, several African ministries of agriculture – such as the Ministry of Food and Agriculture Ghana (MoFAG) and the Ministry of Agriculture and Food Security Mozambique (MoAFSM) – belong to this group.

In addition, the network exhibits a moderate number of non-governmental organisations, with the AFAP, the FTMA, Grow Africa, the International Fertilizer Development Center (IFDC), and TechnoServe identified as important actors. In contrast, research institutes, intergovernmental organisations, banks and foundations are numerically less strongly represented. However, it is noticeable that these four groups comprise a majority of the most powerful network actors. This particularly applies to the AfDB, the Gates Foundation, the CGIAR, the FAO, the IFAD, the NEPAD, the Rockefeller Foundation and the World Bank.

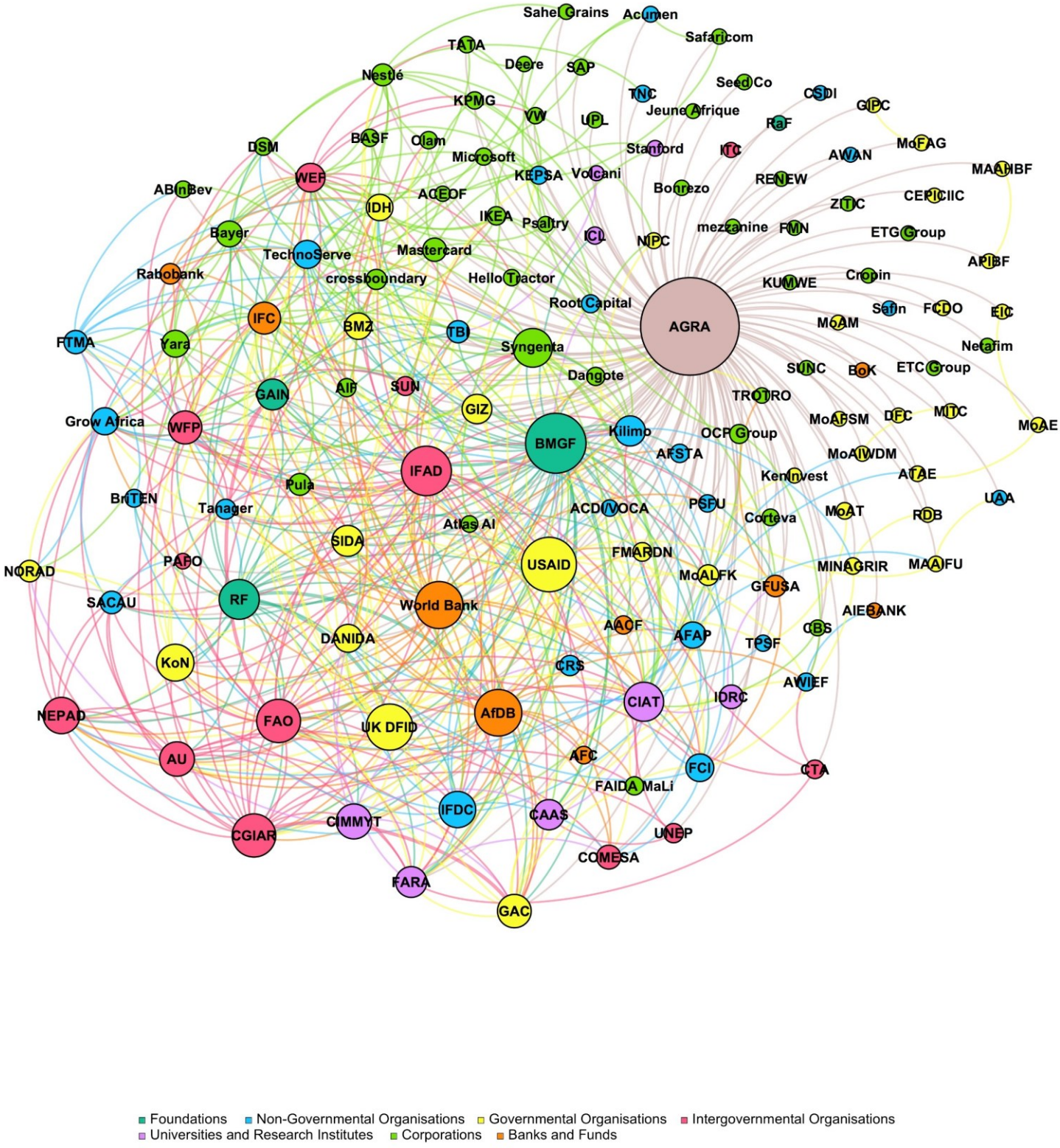

Fig. 10: AGRA's network of official partners. The node's size indicates the actor's influence within the network and the colour, its organisational attribute.

These findings are supported by an additional graph which shows the 25 most influential actors within AGRA's entire network (Fig. 11). The Gates Foundation is the partner that has the greatest influence among these key actors. This is in line with the literature which highlights the significant role of the Gates Foundation within AGRA's network (Daño, 2007; Moran, 2014; Martin-Prével, Mousseau & Mittal, 2016; AGRA Watch, 2020). The AfDB, the IFAD, the International Food Policy Research Institute (IFPRI), the UK DFID, the USAID and the World Bank also hold particularly strong positions.

Figure 11 illustrates that the FAO, the NEPAD, the IFDC, the Rockefeller Foundation, the World Economic Forum (WEF) and the UN World Food Programme (WFP) are further key players. An important cluster appears around the CGIAR and its various research institutes, such as the International Center for Tropical Agriculture (CIAT), the International Maize and Wheat Improvement Center (CIMMYT), and the International Livestock Research Institute (ILRI). In addition, the multinational corporation Syngenta is a key partner.

It is apparent that AGRA's network is primarily shaped by two foundations and two development banks, as well as a number of international development agencies and various intergovernmental organisations. These key players are complemented by a number of research institutes which mainly belong to the CGIAR network.

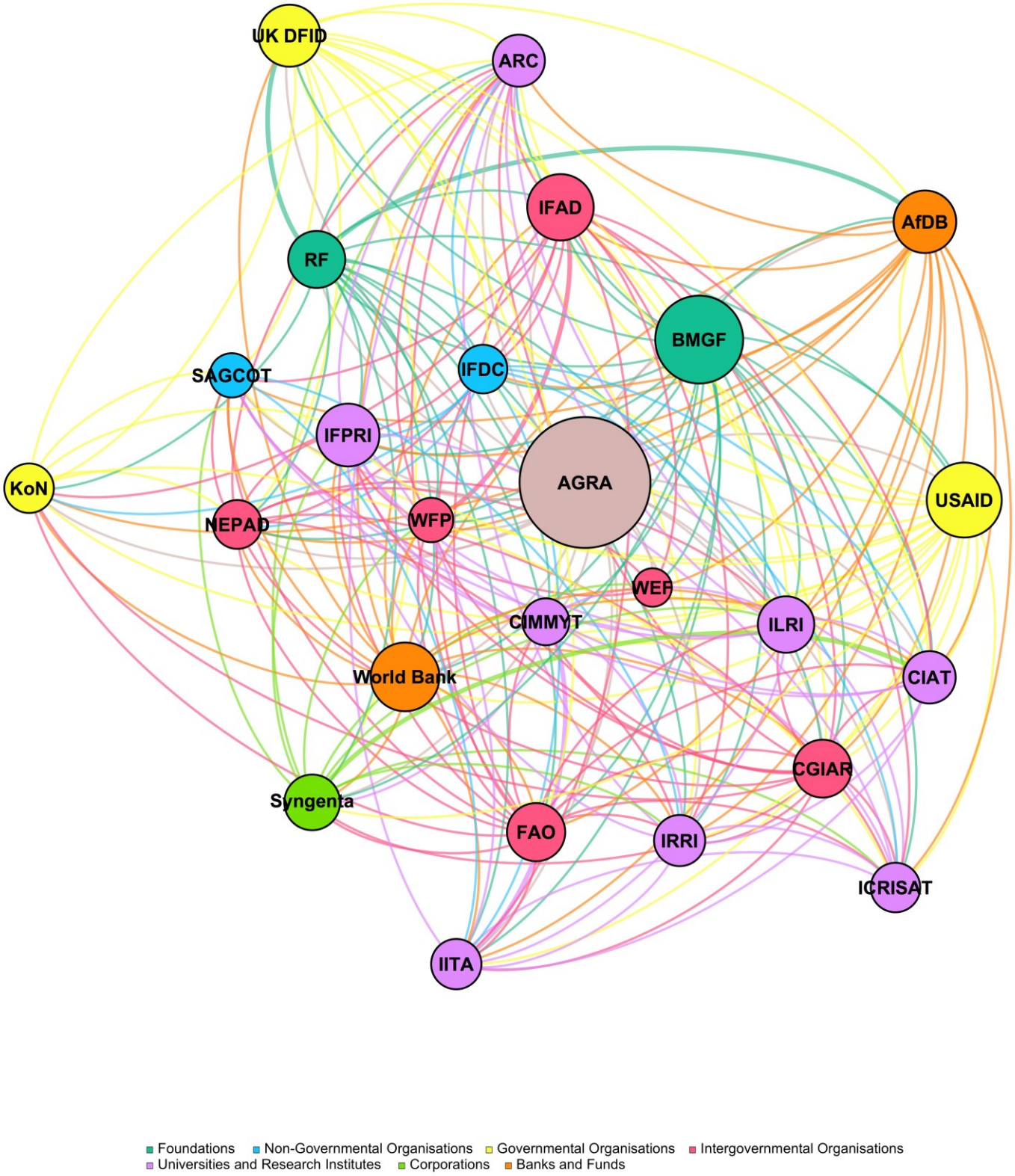

Fig. 11: The 25 most powerful actors in AGRA's network. The node's size indicates the actor's influence and the colour, its organisational attribute.

4.6.3 Further Network Characteristics

Two additional graphs were created in order to explore further key characteristics of AGRA's network. Figure 12 shows AGRA's partners grouped by their organisational form. This chart provides an important overview of the sectoral peculiarities of AGRA's partnerships and shows the three numerically dominant groups in the network to be non-governmental organisations, research institutes, and corporations. While the large number of non-governmental organisations are closely connected to AGRA's deployment of partners for implementation, capacity building, and advocacy activities, the significant number of universities and research institutes underlines AGRA's attempt to establish a global scientific network that contributes to the particular goals of its agricultural transformation. The prominent presence of corporations demonstrates that AGRA ascribes a key role to the private sector in this process. Also strongly represented are governmental organisations and banks, both of which are important actors for the creation of a suitable political, legislative and financial environment. The two groups that constitute the numerical minority in the network are intergovernmental organisations and foundations. However, despite their limited numbers, these organisations account for a significant amount of the most influential network actors. This finding confirms earlier observations regarding the distribution of the key actors in AGRA's network (see Section 4.6.2).

Similar aspects are revealed in Figure 13, which shows AGRA's partners grouped by their geographical background.[20] This demonstrates that a majority of AGRA's partner organisations are situated in Africa, with other network actors either located in North America or Europe. Organisations from countries outside of these geographical regions play only a negligible role. Yet, when considering the geographical dispersion of powerful network actors, it becomes apparent that the African continent includes relatively few key players, limited to the AU, the AfDB and the NEPAD. In contrast, particularly strong power clusters can be found in North America and Europe, with North America exhibiting a significant accumulation of the most influential network actors. Thus, while the quantitative distribution of partners indicates a wide presence

[20] For this graph, intergovernmental organisations were classified by reference to the location of their official headquarters to take into account their role as geopolitical actors (see Section 2.3.1).

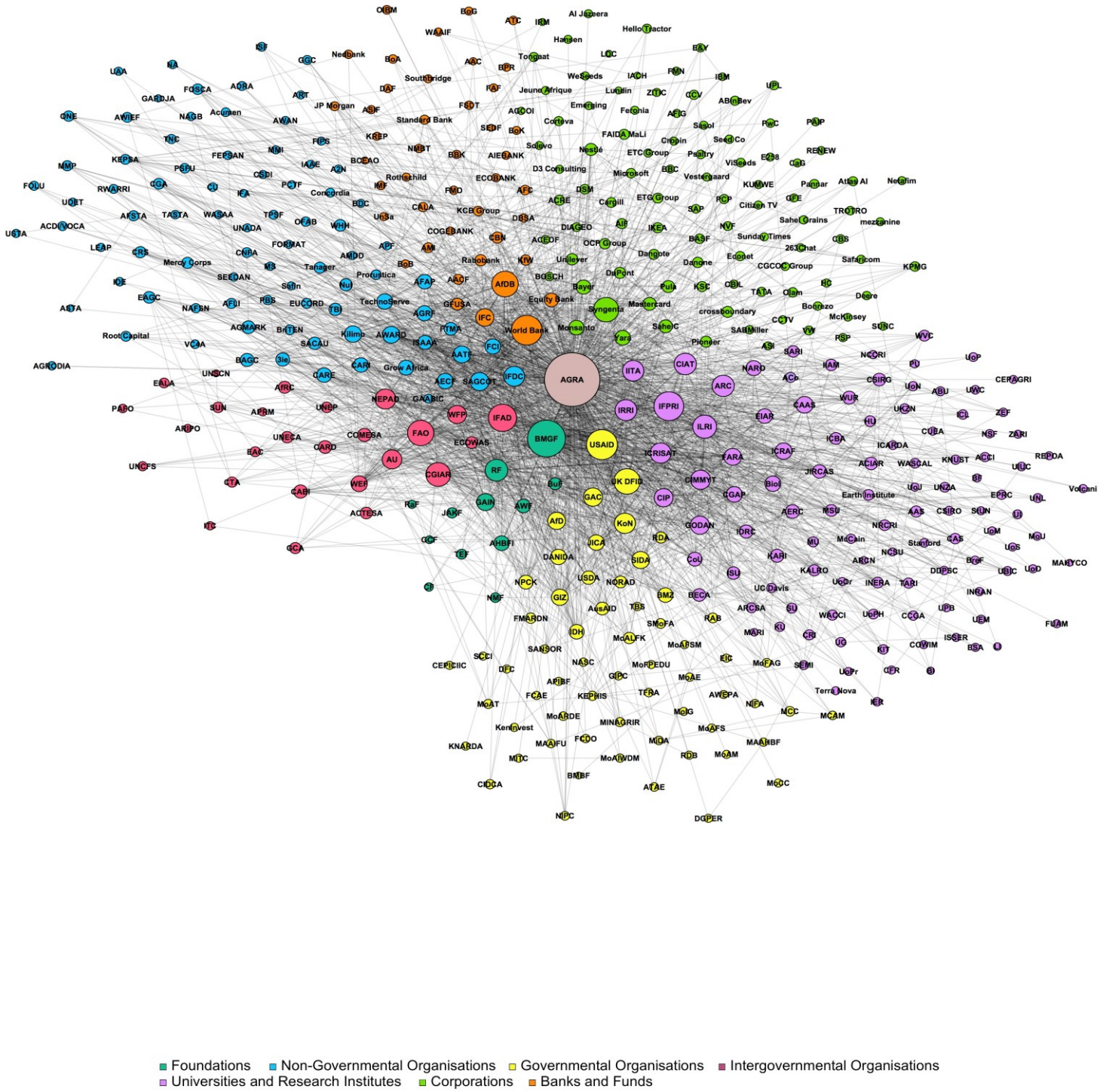

Fig. 12: AGRA's partners grouped by their organisational form. The node's size indicates the actor's influence within the network and the colour, its organisational attribute.

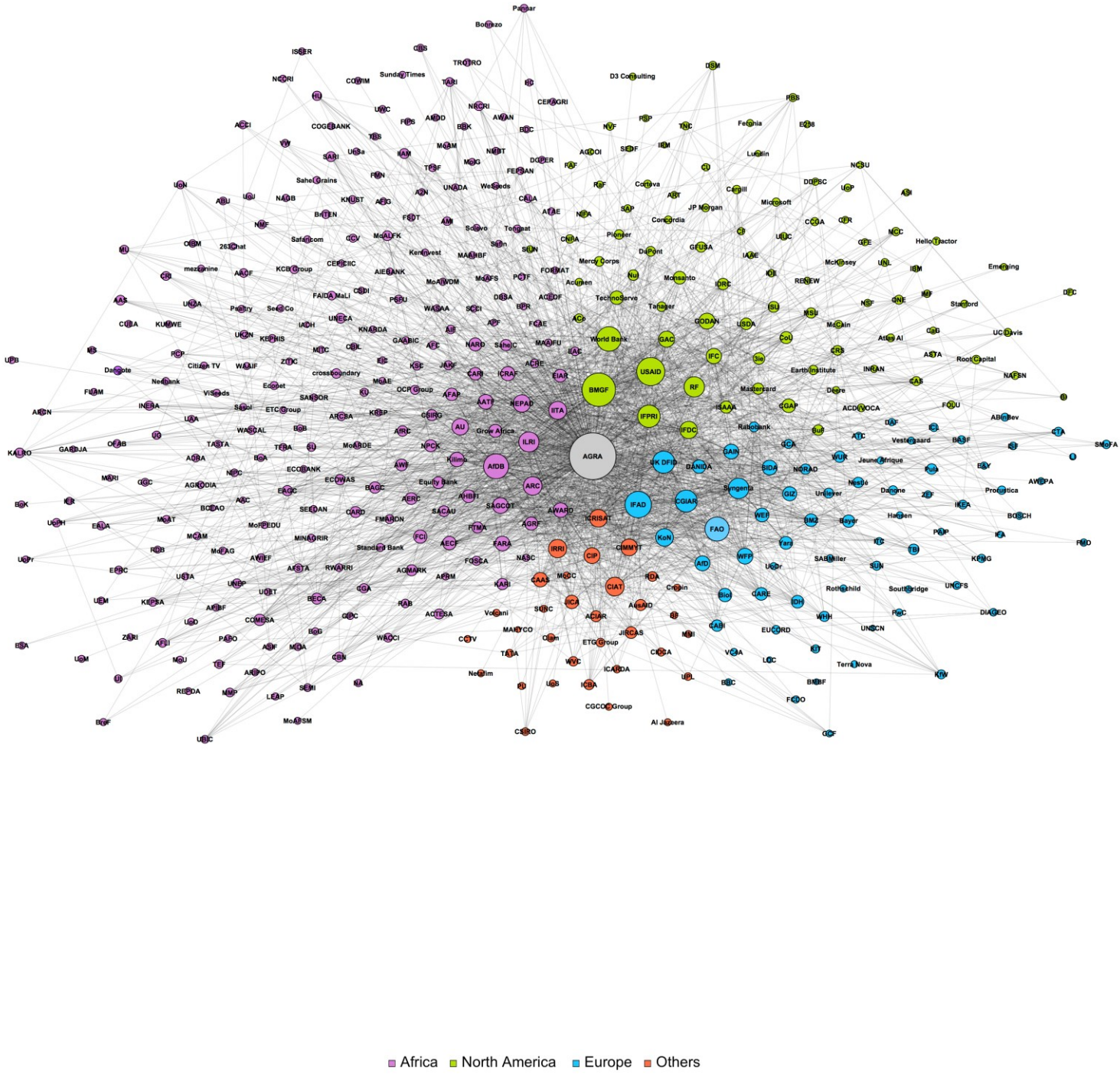

Fig. 13: AGRA's partners grouped by their geographical background. The node's size indicates the actor's influence within the network and the colour, its geographical attribute.

of AGRA's allies in the African region, the concentration of key players in North America and Europe clearly illustrates a power imbalance between the partners from the Global North and those from African countries.

These findings make clear that due to its intersectoral nature, AGRA's web of partners exhibits the characteristics of a multistakeholder network. That such multistakeholder networks today are a widely used tool to successfully promote particular agendas also is highlighted by several think tank related key informants. *Informant_WRI* (Online Interview, 13.09.2021), for example, stated:

> I think the world is increasingly adopting a kind of multistakeholder style approach, where you have governments working with companies and with NGOs and others to try to form a view on an issue. And then making progress together rather than separately on an issue. And I think that think tanks and NGOs play some role in that.

It can be concluded that the high number of governmental agencies, non-governmental organisations, research institutes, and corporations directly mirror AGRA's ambition to closely interlink the improvement of scientific capacities with a transformation of the political environment and a strong involvement of the private sector. Moreover, the majority of the most influential actors can be localised among partnering foundations, development banks, intergovernmental organisations, and development agencies. This especially applies to the AfDB, the Gates Foundation, the IFAD, the UK DFID, the USAID and the World Bank, which were identified as AGRA's most powerful partners. Yet, due to the geographical concentration of these key organisations in North America and Europe, AGRA's network exhibits a significant Global North bias.

4.7 AGRA's Influence on Scientific and Public Discourses

Most respondents agreed that strategic communication is an important tool to shape the course of scientific debates and the development of public opinions. The informant from the Oakland Institute highlighted that in recent years, the campaigns of the CAS have played a particularly crucial role regarding the promotion of technology-driven agriculture innovations (Informant_OI, Online Interview, 08.07.2021). In order to explore how AGRA and its partners influence scientific and public debates, the article

Scientific meta-analysis: Agro-ecology risks harming the poor and worsening gender inequality in Africa (Lynas, 2020) was examined. The key findings of this discourse-related case study are summarised in the following paragraphs.

4.7.1 The General Context of the Article

On July 30th, 2020, an article by Mark Lynas was published on the online blog of the CAS, which is funded by the Gates Foundation and acts as its scientific and public voice (AGRA Watch, 2020). Lynas is an environmental journalist and communication strategist who was involved in campaigns against biotechnology during the early 2000s but has regularly advocated for genetically engineered foods and industrial agriculture technologies since then (Malkan, 2020b). Only a few weeks before the release of Lynas's article, a group of international organisations presented findings in a report titled *False Promises* (Mkindi et al., 2020). This report demonstrated that AGRA had failed to improve food security and to reduce poverty among the smallholder farmers in its focus countries. The report was one of an increasing number of publications that criticised AGRA for failing to communicate its results and argued that due to the limitations of the Green Revolution approach, the agricultural transformation in Africa should be based on agro-ecological principles (Malkan, 2020c). This debate was accompanied by a growing civil society movement which shortly afterwards called on the Gates Foundation to stop its promotion of an industrial agricultural revolution in Africa (IATP, 2021). Thus, the publishing of Lynas's article coincided with mounting pressure being placed on AGRA and the Gates Foundation from various civil society actors and others who held the opinion that Green Revolution approaches were harmful to African smallholder farmers.

4.7.2 Text Structure and Key Statements

In its structure, Lynas's article mainly follows the organisation of a scientific paper. A brief synopsis at the beginning of the text outlines its key finding: that, according to a recent study, agro-ecological approaches trap African farmers in a situation of poverty and food insecurity. This is followed by an analysis where Lynas first introduces his main problem formulation. He claims that key development actors, such as international aid agencies and the UN, broadly campaign for an agro-ecological

agenda despite a lack of scientific evidence for the benefits of agro-ecological approaches.

Lynas then summarises the findings of Corbeels, Naudin and Whitbread's (2020) study, *Limits of conservation agriculture to overcome low crop yields in sub-Saharan Africa*, which was published in the *Nature Food* journal and which compares the productivity of conservation agriculture and conventional tillage farming systems in Africa. Considering that the study observed only slightly higher than average yield increases under conservation agriculture, Lynas argues that agro-ecological methods are not adequate to address the food insecurity of African smallholder farmers. Moreover, he points out that agro-ecology inherently rejects scientific innovations – such as hybrid seeds and biotechnology – which might more reliably achieve productivity increases.

After presenting Corbeels, Naudin and Whitbread's study, Lynas continues to explain that agro-ecology has negative effects, stating that by refusing mechanised farming systems and chemical inputs, agro-ecology not only negatively impacts the improvement of soils and their capacity to uptake carbon but also aggravates gender inequality since women are increasingly compelled to do manual farm labour. Lynas reinforces his arguments with quotes by a researcher from Wageningen University who reviewed Corbeels, Naudin and Whitbread's paper in her article, *Limits of conservation agriculture in Africa* (Descheemaeker, 2020). Lynas concludes that key development actors need to refrain from supporting agro-ecological approaches to prevent a decline in food security and increased gender inequality.

4.7.3 Content Analysis

The coding process showed that from the six coding categories (see Section 2.4.2), *agro-ecology* was the most dominant theme in Lynas's article, with 11 mentions. Yet, despite the prominent presence of this term, Lynas provided no clear definition of its meaning. This ambiguity was further amplified by Lynas's inclusion of the term *conservation agriculture*, which he used eight times as a direct synonym for *agro-ecology*. Hence, by equating the two concepts, Lynas deliberately propagated a limited and distorted interpretation of agro-ecology. This misleading framing was also apparent in Lynas's application of related hyperboles and metaphors – such as

“dominant paradigm” or “panacea” – by which he discredits agro-ecology as an ideological and unscientific agenda. Notable is the fact that Lynas made use of the terms *agro-ecology* and *conservation agriculture* 14 times in sentences that expressed negative impacts such as “a lack of benefits” or “no productivity improvements”. By doing so, he portrayed a highly adverse and negatively associated image of these concepts. In contrast, *technological and scientific innovations* was mentioned four times in the text, always relating to positive impacts such as “productivity increases” or the “removal of carbon”. To add credibility to these statements, Lynas often combined them with phrases such as “in fact” or “indeed”. Hence, although the application of hybrid seeds, biotechnology and synthetic inputs is highly controversial, Lynas presents these innovations as optimal and self-evident solutions. Moreover, while *smallholder farmers* are mentioned nine times in the text, Lynas presents them as a group without agency that purely relies on external expertise and support. This, for instance, becomes apparent when he describes smallholder farmers as “resource-poor farmers” or the “world’s poorest people” that need help to address the issues of food insecurity and poverty. This patronising attitude is also reflected in the overall composition of Lynas’s text, which lacks the views of smallholder farmers. Similar observations can be made regarding the theme of *gender inequality*. Although the term is prominently positioned in the headline of the text, it appears only three more times in the rest of the article, mostly as a catchword. This demonstrates that Lynas incorporated the topic to construct a strategic narrative that positively links industrial agriculture with the increasingly important issue of gender equality. Aspects of *food security* and *agricultural productivity* are each addressed seven times. Both topics are presented by Lynas in a way that underlines the failure of agro-ecological approaches and the benefits of industrial agriculture. It is important to note that Lynas relates food security directly to agriculture productivity and hence leads the reader to the questionable belief that food insecurity is a one-dimensional problem that can simply be solved by productivity increases.

These findings demonstrate that Lynas’s text clearly discredits the concept of agro-ecology while presenting industrial agriculture as the self-evident alternative. To this end, Lynas makes use of a number of argumentative and rhetorical elements which

are part of a broader framing strategy.[21] Yet, although Lynas's article exhibits the formal characteristics of an academic paper, it lacks scientific rigour on crucial levels. This especially applies to his misleading conception of agro-ecology and his biased perspective on technological innovations.

4.7.4 Further Reactions to Lynas's Article

The analysis presented above is supported by the statements of several experts who publicly reacted to the article. For instance, the agronomist Marc Corbeels (2020) – who was a leading author of the study published in the *Nature Food* journal – criticised Lynas for his "sweeping generalisations" regarding the concept of agro-ecology. This view was shared by the political ecologist Marcus Taylor (2020), who sees the article as part of an "ideological agenda" and again outlines the fundamental differences between conservation agriculture and agro-ecology. Researcher Yodit Kebede (2020) views Lynas's article as a "demagogic and non-scientific interpretation of a scientific paper".

[21] As outlined by Frost and Vogel (2007), *framing* often is used as a form of strategic communication in texts. According to the authors, framing strategies typically include 3 stages: the breaking of an old frame, the construction of a new frame, and the adjustment of this new frame. In his text, Lynas executes these three steps by 1) undermining the concept of agro-ecology, 2) introducing industrial agriculture as a self-evident alternative and 3) calling on the key development actors to change their priorities.

Chapter 5: Discussion

With a particular focus on AGRA's agenda for agricultural transformation, this chapter discusses the main findings of the study and provides an analysis of AGRA from a think tank perspective.

5.1 AGRA's Vision of an Agricultural Transformation

The findings illustrate that AGRA's agenda for an agricultural transformation in Africa is highly contested. This especially applies to aspects of food security and poverty reduction, for which the group of key informants showed contrary positions. With regard to food security, it can be noted that AGRA failed to achieve its own objective, which was to improve the food situation of 30 million smallholder farmers by 2021. This shortcoming clearly indicates that the technology-based solutions promoted by AGRA did not lead to the expected productivity increases at the scale envisaged. In addition, AGRA's approach did not sufficiently address food security dimensions such as food distribution and access to food or social-cultural preferences for certain staple diets. This was affirmed by several authors who emphasise that AGRA's measures fall short of accounting for the complex set of factors that cause food insecurity among African smallholder farmers (Greenberg, 2012; Patel, 2013; Martin-Prével, Mousseau & Mittal, 2016; Mkindi et al., 2020; Malkan, 2020a; Wise, 2020a). *Informant_FAO's* observation that AGRA's food security activities are continuously set back by external events such as the COVID-19 pandemic suggests that the adopted food system approach lacks the necessary resistance to unexpected shocks.

Similar shortcomings are apparent with regard to the closely linked goal of poverty reduction. Thus far, AGRA has released few details regarding the impact of its measures on yield surpluses and income. However, the findings of this study indicate that smallholder farmers rarely benefit from potential surpluses due to the higher costs for new inputs. AGRA's advocacy activities for neoliberal market reforms additionally place smallholder farmers in a precarious position since this directly exposes them to market dynamics, which are controlled by multinational corporations. Thus, while the creation of markets is an important tool to improve livelihoods, the case of India demonstrates that these need to be designed according to the specific needs of smallholder farmers since the combination of production risks, low incomes and power

imbalances otherwise induces circular poverty traps instead of economic prosperity (Singh, 2020). The significance of these risks is pointed out by several scholars who highlight that due to its strong market orientation, AGRA's approach benefits actors of the global private sector rather than African smallholder farmers and local businesses (Daño, 2007; ACB, 2014; Martin-Prével, Mousseau & Mittal, 2016; Swanepoel, 2016; Mkindi et al., 2020).

A more consistent view was found concerning AGRA's approach to ecological sustainability, which was considered as inadequate by a majority of the key informants. Although AGRA applies a number of ecologically sustainable techniques – such as integrated soil fertility management practices and climate-smart agriculture – its agricultural approach still shows a strong focus on monocultures based on hybrid seeds and synthetic inputs. This approach not only negatively impacts the fertility of soils and the diversity of plant and animal species, but due to the replacement of local seed varieties also undermines the climate resilience of smallholder farmers in the long term (Swanepoel, 2016; Benton et al., 2021). Moreover, the correlation between market demands and promoted hybrid seeds illustrates that AGRA's approach lacks a holistic perspective which equally takes into account economic and ecological factors. This view is shared by several other critics who point out that AGRA's agenda provides no sound foundation for the establishment of agriculture systems that address the issues of environmental degradation and climate change in a sustainable manner (Holt-Giménez, 2008; Greenberg, 2012; ACB, 2014; Swanepoel, 2016; Belay & Wise, 2019).

The unidimensional character of AGRA's agenda is also apparent when analysing its approach to inclusion and participation. Despite AGRA's explicit focus on smallholder farmers, the organisation does not include stakeholders of this particular group in the design of its programmes and its decision-making. This raises questions about AGRA's ability to sufficiently take into consideration local knowledge and experiences. It also underlines that AGRA's agenda mainly follows the logic of a top-down approach which tends to reproduce structural power imbalances such as gender inequality. Moreover, given that a majority of the decision-makers and key partners are located in the Global North, it can be questioned to what extent AGRA's agenda is reflective of the specific needs of this highly diverse group of African smallholder farmers. This

discrepancy plays a prominent role in the literature, which emphasises that AGRA's mode of governance lacks inclusion and participation mechanisms as well as transparency and accountability (Scoones & Thompson, 2011; Patel, 2013; Mkindi et al., 2020; Wise, 2020a).

These findings reveal that despite its programmatic adaptations, AGRA's agenda runs the risk of repeating the flaws of past Green Revolutions. A main reason for this observation is that due to its unidimensional character, AGRA's approach does not manage to address the diverse challenges of African smallholder farmers sufficiently. For instance, to successfully improve the food and livelihood situation in African countries, AGRA would need to focus on the different dimensions of food security more holistically and encourage the implementation of mechanisms that protect the interests of smallholder farmers within the market as well as their access to land. This would need to be accompanied by the establishment of independent farmer organisations, the strengthening of local value chains, and the promotion of alternative trading systems. It would also be necessary to design the different production and distribution processes more strictly along ecological principles in order to improve environmental conservation and climate resilience. However, such measures only have the potential to succeed in the long run if AGRA is willing to include a much wider range of relevant stakeholders and approaches. Thus, a first key step would be to entrench inclusion and participation mechanisms and to commit to more transparency and accountability.

5.2 AGRA from a Think Tank Perspective

The findings of the study demonstrate that due to its operational character, AGRA does not comply with the criteria commonly associated with classical think tanks. However, AGRA exhibits a number of other key features that are clearly think tank related. This applies particularly to its research, advisory and advocacy activities, as well as to its role as an initiator of cross-sectoral partnerships. With these activities, AGRA regularly intervenes in the four fields of power which Medvetz (2010; 2012) outlined as the typical areas of operation of think tanks. Thus, corresponding with the criteria identified in the literature, AGRA can be described as a hybrid organisation, and more particularly, as a *Think & Do Tank*.

Beyond this definitional aspect, the analysis of AGRA from a think tank perspective contributes further valuable information regarding AGRA's influence on current governance processes. The network analysis revealed that AGRA mainly uses a multistakeholder partnership approach to promote its agenda. While the large number of corporations in its network underline the important role of the private sector in these processes, a group of key partners – including the AfDB, the FAO, the IFAD, the USAID and the World Bank – shows that AGRA also enjoys privileged access to some of the most influential intergovernmental organisations, development banks, and aid agencies. A similar observation is made by Moran (2014), who points out that the large number of high-level partnerships is a distinct characteristic of AGRA's network and that the Gates Foundation and the Rockefeller Foundation provide AGRA with direct access to elite-level policy communities in the field of international development and among African governments. This elite character again illustrates the crucial role of the two foundations within AGRA's network and highlights that the design of AGRA's programmes follows a top-down rather than bottom-up approach. However, the biased nature of AGRA's agenda not only becomes apparent in view of the dominant presence of powerful partners from Western countries but also when considering actors who are systematically excluded from the network. Although multistakeholder partnerships are characteristic for AGRA's alliance, its network clearly lacks any organisations that challenge the unidimensionality of industrial agriculture.[22] This might include actors from the food sovereignty or agro-ecology movement. The homogeneity of the network indicates that AGRA strategically musters partners which, in addition to their expertise and resources, represent a certain set of technology-oriented and pro-market values.

The discourse-related case study revealed that such ideological connotations can also be found in the communication strategies of AGRA and its partners. The analysis of the article by Lynas (2020) demonstrated that in the network of AGRA and the Gates Foundation, the CAS provides an important strategic platform to discredit alternative agricultural approaches. These defamations often go hand in hand with the

[22] Pavageau et al. (2020) demonstrate that this bias also can be found in the broader funding strategy of the Gates Foundation, where 85% of the foundation's agriculture-related investments are allocated to projects that promote industrial agriculture, with only 3% going to projects that include agro-ecological components.

establishment of misleading narratives on the basis of which the CAS's fellows systematically question the efficiency of those alternative concepts and strengthen the position of technology-driven agricultural approaches in academic, public, and political debates (AGRA Watch, 2020; Malkan, 2020d). With this strategy, the CAS significantly contributes to the acceptance of the particular development paradigm represented by the Gates Foundation and AGRA. According to Belay and Mugambe (2021), this applies especially to African countries where the activities of the CAS already have diminished support for agro-ecological practices among scientists and political leaders. By making these underlying motivations transparent, the case study illustrated that AGRA and its key partners are not neutral promoters of an inclusive agricultural transformation. Instead, AGRA and its allies display features of an ideological advocacy network which – as the example of the US climate change denial movement shows – often is driven by certain values and enforces its agenda by intervening in the political, scientific and public spheres in a partisan way.

The case of AGRA also provides the opportunity to draw some general conclusions about the specific challenges of think tanks in Global South countries. For instance, the powerful role of donors within AGRA's network makes clear that the provision of neutral and unbiased funding structures remains a main factor for the establishment of autonomous Southern think tanks. In this regard, *Informant_IGD* highlighted a paradoxical dynamic which significantly limits the work of African think tanks. The informant explained that many African governments mistrust think tanks due to their affiliations to Global North donors. However, this exclusion from policy processes not only weakens the influence of think tanks but also further undermines their local funding options, which in turn increases their dependence on Global North donors (Informant_IGD, Online Interview, 10.09.2021).

A solution would be to establish a supranational and independent African institution which coordinates the relevant funding (McGann, 2020). Moreover, it seems crucial that Southern think tanks adequately address the diverse knowledge constellations in their countries. According to *Informants_FANRPAN*, this not only implies the stronger incorporation of local and indigenous knowledge but also the development of special science communication strategies to sufficiently reach various stakeholders:

> We, for example, deal with rural peasant farmers, who in some instances have no formal education, or their communication is restricted to the vernacular language. Outputs of scientific research mean nothing to them … [So] research needs to be translated into a language that can be understood by the person at the lowest level of academic exposure (Informants_FANRPAN, Online Interview, 28.07.2021).

The autonomous position of Southern think tanks further needs to be strengthened on transnational and global levels. Goux-Baudiment (2008) points out that the establishment of more South-South collaborations and independent Southern issue networks is an efficient way to reach this objective. Also important is the realignment of global knowledge flows in order to enable an equal exchange between Global North and Global South actors. This was highlighted by *Informant_3* (Online Interview, 02.08.2021), who observed that for both groups, it is vital:

> to have this kind of transnational exchange and knowledge transfer. And by knowledge transfer I also mean that we [Global North countries] can learn a lot from countries of the South. For a long time, the idea was that we give our insights and knowledge to them. But talking about adaption to climate change we can probably learn a lot from them. And not only in this regard.

Chapter 6: Conclusion

This study aimed to examine AGRA's role within current approaches to agricultural transformation in Africa. To this end, the research project looked at AGRA's organisational form, its programmatic key elements, and its network of partners from a think tank perspective. The study further explored how and on what levels AGRA and its partners shape environmental governance processes. The research used triangulation to combine multiple methods to enhance the quality and robustness of the findings. The methods included a desktop study, a network analysis, a discourse-related case study, and key informant interviews.

6.1 Key Findings

Although the findings revealed that AGRA's organisational character does not meet the criteria of a classical think tank, its research, advisory and advocacy activities and role as an initiator of multistakeholder partnerships are characteristics representative of think tanks. Thus, from a think tank perspective, AGRA can be understood as a hybrid organisation and more particularly, as a *Think & Do Tank*.

The findings further demonstrated that AGRA's agenda is strongly focused on industrial agricultural practices and market-led solutions. Due to this unidimensional character, AGRA's programmes do not address the specific needs of African smallholder farmers sufficiently. For instance, AGRA's lack of a more holistic perspective comes with significant shortcomings regarding aspects of food security and poverty reduction. A similar observation was made in respect of AGRA's inadequate inclusion mechanisms, which widely exclude smallholder farmers and marginalised groups from decision-making processes. Another crucial finding is the incompatibility of AGRA's industrial agricultural approach with ecologically sustainable agriculture practices.

The study further illustrated that AGRA's agenda is closely related to the paradigms of its most powerful network partners. These are mainly foundations, aid agencies, intergovernmental organisations and banks, with the Gates Foundation playing a particularly influential role. Moreover, since most of these key actors are situated in North America and Europe, AGRA has a Global North bias with regard to decision-

making. The findings demonstrate that AGRA's network is shaped by a large number of corporations and CGIAR-affiliated research institutes. This web of partners lacks any organisations that present alternative paradigms to those of industrial agriculture, indicating that the network is strongly value-centred. This observation is supported by the findings of the discourse-related case study, which revealed that AGRA's alliance strategically defames other agricultural development approaches. Due to this homogeneity and partiality, AGRA and its partners display typical features of an ideological advocacy network.

The study highlighted that AGRA shapes current environmental governance processes on various levels. One main tool to influence governance systems is that of multistakeholder partnerships. The findings showed that on the national level, AGRA and its partners primarily advocate for market-friendly reforms to create an adequate environment for corporations and the application of industrial agricultural inputs. Additionally, AGRA enjoys privileged access to some of the most influential intergovernmental organisations and elite-level policy communities. This privileged access provides AGRA with the opportunity to influence the design of broader international development agendas.

6.2 Recommendations for Further Research

Given AGRA's lack of communication of its outcomes, further evaluation of AGRA's impacts is necessary. The same applies to the relationships between AGRA and its key partners, which were only schematically explored in this study. Additionally, a comprehensive discourse analysis of relevant publications would help to better understand the communication strategies and objectives of AGRA and its partners.

Regarding agricultural transformation in Africa, future research needs to focus on the inclusion of marginalised groups, such as women and youth, as well as on ecologically sustainable agricultural practices. Moreover, considering the highly polarised debates around industrial agriculture and agro-ecology, an exploration of productive linkages between those concepts might provide important insights for how the existing agricultural system can be transformed in a holistic way.

To foster the establishment of independent African think tanks, new funding mechanisms need to be conceived and developed. Further research is required regarding the seemingly dysfunctional relationship between think tanks and governments in African countries. This also applies to strategies for the better inclusion of local knowledge forms and the strengthening of South-South collaborations.

6.3 Recommendations for African Agricultural Transformation

Based on this study's findings, it can be concluded that AGRA's approach is inadequate in stimulating sustainable agricultural transformation in Africa. Considering that on many levels, AGRA's market-led and technology-driven approach is incompatible with the prioritisation of ecological and social aspects, a shift of AGRA's broader development paradigm is necessary to holistically address the issues of food insecurity, poverty and environmental degradation. Since AGRA's agenda is closely linked to the development paradigm of its donors, a transformation of AGRA's funding structure is essential. AGRA also has to take into account the diversity of African agriculture systems and the knowledge of local farmers more directly. This means that the establishment of inclusion mechanisms is another key step. Moreover, a stronger commitment to ecological principles is required in order to ensure that any interventions are made in an ecologically sustainable and climate-resilient way.

Against this background, the existing range of other agricultural concepts – such as agro-ecology or permaculture – provide the opportunity to base agricultural transformation in Africa on principles that address existing key challenges more adequately. Thus, instead of further polarising public and scientific debates, AGRA and related decision-makers should impartially explore the benefits of these approaches and identify ways to incorporate them efficiently into future programmes. These incorporations need to be more than selective adjustments and can only succeed if AGRA is willing to implement the broader funding, inclusion and sustainability transformations mentioned above. The adoption of new development principles also should be accompanied by a diversification of agriculture-related research funding and the initiation of relevant partnerships.

Given AGRA's lack of transparency, its strong support from key donors, and the value-driven character of its network, it seems unlikely that AGRA will prompt such far-

reaching shifts through its own initiative. Hence, it is important that civil society actors, researchers and other stakeholders continue to critically question the activities of AGRA and its donors. This pressure could be intensified by strengthening existing alliances that allow the coordination of actions and link African smallholder farmers more closely to other involved actors. African governments further need to ensure that AGRA commits to the goals of a socially, ecologically and economically sustainable agricultural transformation and withdraw from AGRA if these objectives are not met.

To avoid an overly strong dependence on expertise from Global North countries, African governments also should strengthen independent African think tanks and integrate them more efficiently into the relevant decision-making processes. This requires the development of neutral funding mechanisms, the identification of agricultural key challenges on the national and pan-African level, and the fostering of South-South collaborations which take into account the diverse social, economic and ecological conditions of African countries.

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Appendices

Appendix 1

Questionnaire (AGRA-related Key Informants)

1. Can you please briefly introduce your professional background and outline how your work is linked with the *Alliance for a Green Revolution in Africa* (AGRA)?

2. How would you summarise the overall agenda of AGRA?

3. According to its webpage, AGRA aims to improve food security of 30 million African smallholder farmers by 2021. How realistic is this goal? And why or why not is AGRA's particular approach an effective one to fight food insecurity in the long-term?

4. AGRA's approach to fight food insecurity is closely linked to its goal of poverty reduction. One key strategy to increase the income of smallholder farmers is to integrate them more efficiently into the global agricultural economy. Can you outline why such a market-led approach is an appropriate or inappropriate tool to tackle poverty? And who do you think benefits most of this strategy?

5. Another key aspect which was outlined in several statements is that AGRA aims to push the agricultural productivity of African smallholder farmers in an ecologically sustainable way. Can you please explain what methods are implemented by AGRA to achieve ecological sustainability? And how effective do you think they are?

6. AGRA describes itself as a "farmer-centred" organisation. Can you please outline how AGRA includes smallholder farmers in its decision-making? What mechanisms does it use to stimulate this participation? And how effective are these mechanisms in your opinion?

7. In terms of its organisational structure AGRA is often labelled an agricultural think tank by the media? Do you agree with that? And if yes/no, why?

8. As an “alliance”, strategic partnerships are an organisational key element of AGRA. Are you involved in any of these alliances? And what role do these partnerships play for the implementation of AGRA's agenda in your opinion?

9. Given their important role as funders the Gates Foundation and the Rockefeller Foundation are widely described as two of AGRA’s key partners. However, a closer look reveals that AGRA’s network also includes several actors from governmental and non-governmental contexts as well as a number of corporations. Can you name some further actors that you see as key partners of AGRA?

10. Although AGRA formally is an African-led institution its board consists of several non-African members and its main funders are foundations from the US. Do you understand this as a productive or as a problematic constellation? And why?

11. Can you outline some of the key steps that need to be taken to achieve the interlinked goals of food security, poverty reduction and ecological sustainability in African countries in the future?

Questionnaire (Think Tank Related Key Informants)

1. Can you please briefly introduce your professional background and outline how your work is linked to the think tank environment?

2. How would you describe the general role of think tanks within modern governance systems?

3. Over the last years the number of environmentally-related think tanks has continuously increased. What are the reasons for this development? And how can think tanks contribute to the solution of climate change and environmentally-related issues in your opinion?

4. In his book about green think tanks Alexander Ruser (2018) highlights that the agenda of a think tank often is closely related to that of its main funders. What do you think about this observation?

5. What methods and strategies are used by your institution to proactively shape governance processes?

6. Think tanks often influence the political and public debates by establishing strategic narratives. This, for example, becomes apparent in the case of the climate change denial movement. To what extent have you encountered the use of strategic communication in your work? And what makes it such an important tool for think tanks?

7. Think tanks are also known for their strategical use of networks. That is one of the reasons why they are often considered to be key actors in today's multistakeholder governance processes. What role do networks and partnerships play for the success of a think tank in your opinion?

8. Historically, think tanks mainly have emerged in Global North countries and stand for a very specific form of rational knowledge production. This is why experts from the Global South increasingly call for the inclusion of other knowledge forms. What do you think about this argument?

9. Although climate change and environmental issues so far have posed a more direct risk to countries in the Global South, most environmentally-related think tanks are situated in the Global North. What do you think are the reasons for this imbalance?

10. In my study I take a closer look at the *Alliance for a Green Revolution in Africa* (AGRA). Although AGRA does a lot of operational work on the ground it is often labelled an agricultural think tank by the media. Do you see this as a contradiction? Or can think tanks also act as “Think & Do Tanks”?

11. Independent Global South think tanks are often considered to be a useful instrument to enhance the governance systems in developing countries and to help them finding effective responses to their future challenges. Can you name three key improvements that in your opinion are essential to fully unfold this positive potential of think tanks in African countries?

Appendix 2

Sources (Network Analysis)

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Appendix 3

Results Twitter Analysis: The 20 Key Followers in AGRA's Twitter Network

Analysed with Tweepi on 21 May 2021

Total followers of AGRA's Twitter account (@AGRAAlliance): 37951

USER	FOLLOWERS	REAL NAME	INSTITUTIONAL AFFILIATION	GEOGRAPHICAL LOCATION	ORGANISATIONAL FORM
@gatesfoundation	2126348	Bill & Melinda Gates Foundation	Bill & Melinda Gates Foundation	US	Foundation
@6BillionPeople	2112726	Marquis Trill	Entertainment 258	US	Marketing Company
@KoinangeJeff	1867391	Jeff Koinange	Citizen TV	Kenya	Media Company
@NelsonMandela	1588223	Nelson Mandela	Nelson Mandela Foundation	South Africa	Foundation
@SafaricomPLC	1575828	Safaricom Public Limited Company	Safaricom Public Limited Company	Kenya	Communications Company
@ONECampaign	1555128	ONE Campaign	ONE Campaign	US	Non-governmental Organisation
@soledadobrien	1346152	Soledad O'Brien	Hearst Communications	US	Media Company
@JulieGichuru	1240606	Julie Gichuru	Mastercard Foundation	Canada	Foundation
@UNEP	1105192	UN Environment Programme	UN Environment Programme	Kenya	Intergovernmental Organisation
@Jmakamba	1068171	January Makamba	Bumbuli Development Corporation	Tanzania	Non-governmental Organisation
@nature_org	986749	The Nature Conservancy	The Nature Conservancy	US	Non-governmental Organisation
@Hkigwangalla	741929	Hamisi Kigwangalla	PeerCorps Trust Fund	Tanzania	Non-governmental Organisation
@_AfricanUnion	668325	African Union	African Union	Ethiopia	Intergovernmental Organisation
@akin_adesina	531902	Akinwumi Adesina	African Development Bank	Ivory Coast	Bank
@moigovgh	496530	Ministry of Information Ghana	Ministry of Information Ghana	Ghana	Governmental Organisation
@263Chat	488078	263Chat	263Chat	Zimbabwe	Media Company
@jnovogratz	478191	Jacqueline Novogratz	Acumen	US	Fund
@WorldBankAfrica	475821	World Bank Africa	World Bank	US	Bank
@IamMzilikazi	462550	Mzilikazi Wa Afrika	Sunday Times	South Africa	Media Company
@Fchurii	440226	Francis Gachuri	Citizen TV	Kenya	Media Company

(All actors that were already identified as part of AGRA's network before the Twitter analysis are highlighted in red)

Appendix 4

List of Acronyms (Network Graphs)

3ie	International Initiative for Impact Evaluation
A2N	Africa 2000 Network
AAC	African Agricultural Capital
AACF	African Agriculture Capital Fund
AAS	The African Academy of Science
AATF	African Agriculture Technology Foundation
ABInBev	Anheuser-Busch InBev
ABU	Ahmadu Bello University
ACCI	African Centre for Crop Improvement
ACEOF	Africa CEO Forum
ACIAR	Australian Centre for International Agricultural Research
ACo	Atlantic Council
ACRE	Agriculture and Climate Risk Enterprise
ACTESA	Alliance for Commodity Trade in Eastern and Southern Africa
ADRA	Adventist Development and Relief Agency
AECF	African Enterprise Challenge Fund
AERC	African Economic Research Committee
AFAP	African Fertilizer and Agribusiness Partnership
AFC	Agricultural Finance Corporation
AfD	French Development Agency
AfDB	African Development Bank
AFIG	Advanced Finance & Investment Group LLC
AFLI	African Leadership Institute
AfRC	African Risk Capacity
AFSTA	African Seed Trade Association
AGCOI	AGCO International
AGMARK	Agricultural Market Development Trust
AGRA	Alliance for a Green Revolution in Africa

AGRF	African Green Revolution Forum
AGRODIA	Association for Wholesalers and Small Traders of Agricultural Products
AHBFI	Africa Harvest Biotech Foundation International
AIEBANK	African Import-Export Bank
AIF	Africa Improved Foods
AMDD	Association for Sustainable Development Mali
AMI	African Management Institute
APF	African Philanthropy Forum
APIBF	Agency for Promotion of Investments Burkina Faso
APRM	African Peer Review Mechanism
ARC	African Rice Center
ARCN	Agricultural Research Council of Nigeria
ARCSA	Agricultural Research Council South Africa
ARIPO	African Regional Intellectual Property Organization
ART	Architecture for REDD+ Transactions
ASI	Agricultural Services International
ASIF	African Seed Investment Fund
ASTA	American Seed Trade Association
ATAE	Agricultural Transformation Agency Ethiopia
ATC	Agri-Tech Catalyst
AU	African Union
AusAID	Australian Agency for International Development
AWAN	African Women Agribusiness Network
AWARD	African Women in Agricultural Research and Development
AWEPA	Association of European Parliamentarians with Africa
AWF	African Wildlife Foundation
AWIEF	Africa Women Innovation & Entrepreneurship Forum
BAGC	Beira Agricultural Growth Corridor
BBC	British Broadcasting Corporation
BBK	Barclay's Bank of Kenya
BCEAO	Central Bank of West African States
BDC	Bumbuli Development Corporation

BECA	Biosciences Eastern and Central Africa
BF	Barwale Foundation
BI	Breakthrough Institute
BioI	Bioversity International
BMBF	Federal Ministry for Education and Research Germany
BMGF	Bill & Melinda Gates Foundation
BMZ	Federal Ministry for Economic Cooperation and Development Germany
BoA	Bank of Africa
BoB	Bank of Botswana
BoG	Bank of Ghana
BoK	Bank of Kigali
BOSCH	Bosch GmbH (Robert Bosch Foundation)
BPR	Bank Popular of Rwanda
BreF	Brenthurst Foundation
BriTEN	Building Relationship Incomes Through Entrepreneurship
BuF	Buffet Foundation
CAAS	Chinese Academy of Agricultural Science
CABI	Centre for Agriculture and Bioscience International
CaG	Capital Group
CALA	Centre for African Leaders in Agriculture
CARD	Coalition for African Rice Development
CARE	CARE International
CARI	Competitive African Rice Initiative
CAS	Cornell Alliance for Science
CBIL	CBi Innovations Limited
CBN	Central Bank of Nigeria
CBS	Crop Bioscience Solutions
CCGA	Chicago Council on Global Affairs
CCTV	China Central Television
CCV	Circle Capital Venture
CEPAGRI	Centre for Meteorological and Climate Research Applied to Agriculture in Campinas

CEPICIIC	Centre for the Promotion of Investments Ivory Coast
CF	Clinton Foundation
CFR	Council on Foreign Affairs
CGA	Cereal Growers Association
CGAP	Consultive Group to Assist the Poor
CGCOC Group	CGC Overseas Construction Group Co. Ltd
CGIAR	Consultative Group for International Agricultural Research
CIAT	The International Center for Tropical Agriculture
CIDCA	China International Cooperation Development Agency
CIMMYT	International Maize and Wheat Improvement Center
CIP	International Potato Center
CNFA	Citizens Network for Foreign Affairs
COMESA	The Common Market for Eastern and Southern Africa
CoU	Cornell University
COWIM	COWI Mozambique
CRI	Crops Research Institute Ghana
CRS	Catholic Relief Services
CSDI	Centre for Sustainable Development Initiatives
CSIRG	Council for Scientific and Industrial Research Ghana
CSIRO	Australian Commonwealth Scientific and Industrial Research Organisation
CTA	Technical Centre for Agricultural and Rural Cooperation
CU	Concern Universal (United Purpose)
CUEA	Catholic University of Eastern Africa
DAF	Danish Agribusiness Fund
DANIDA	Danish International Development Agency
DBSA	Development Bank of Southern Africa
DDPSC	Donald Danforth Plant Science Center
Deere	John Deere
DFC	International Development Finance Corporation
DGPER	Directorate General for the Promotion of the Rural Economy Burkina Faso
DSM	Royal DSM

E&Y	Ernst & Young
E258	Entertainment 258
EAC	East African Community
EAGC	Eastern Africa Grain Council
EALA	East African Legislative Assembly
Earth Institute	Earth Institute Columbia University
ECOWAS	Economic Community of Western African States
EIAR	Ethiopian Institute for Agricultural Research
EIC	Ethiopian Investment Commission
Emerging	Emerging AG, Inc
EPRC	Economic Policy Research Centre
ESA	Ebonyi State University
ETC	ETC Consulting
ETG	Export Trading Company
EUCORD	European Cooperative for Rural Development
FAF	Fairfax Africa Fund
FAO	UN Food and Agriculture Organization
FARA	Forum for Agricultural Research in Africa
FCAE	Federal Cooperative Agency Ethiopia
FCDO	Foreign, Commonwealth and Development Office
FCI	Farm Concern International
FEPSAN	Fertilizer Producers and Suppliers Association of Nigeria
FIPS	Farm Input Promotions Africa
FMARDN	Federal Ministry of Agriculture and Rural Development Nigeria
FMN	Flour Mills of Nigeria
FMO	Entrepreneurial Development Bank
FOLU	Food and Land Use Coalition
FORMAT	Forum for Organic Resource Management and Agricultural Technologies
FOSCA	Farmer Organization Support Center in Africa
FSDT	Financial Sector Deepening Trust Tanzania
FTMA	Farm to Market Alliance

FUAM	The Federal University of Agriculture Makurdi
GAABIC	Ghana Agricultural Associations Business and Information Centre
GAC	Global Affairs Canada
GAIN	Global Alliance for Improved Nutrition
GARDJA	Ghana Agricultural and Rural Development Journalist Association
GCA	Global Center on Adaptation
GCF	Gatsby Charitable Foundation
GFE	Global Food Exchange
GFUSA	Grameen Bank (Grameen Foundation)
GGC	Ghana Grains Council
GIPC	Ghana Investment Promotion Centre
GIZ	German Development Cooperation
GODAN	Global Open Data for Agriculture and Nutrition
Hansen	Chr. Hansen
HC	Hearst Communications
HU	Haramaya University
IAAE	International Association of Agricultural Economics
IACH	Injaro Agricultural Capital Holdings
IBM	International Business Machines
ICARDA	International Center for Agricultural Research in the Dry Areas
ICBA	International Center for Biosaline Agriculture
ICL	Imperial College London
ICRAF	World Agroforestry Centre
ICRISAT	International Crops Research Institute for the Semi-arid Tropics
IDE	International Development Enterprise
IDH	IDH – The Sustainable Trade Initiative
IDRC	International Development Research Centre
IER	Institute of Rural Economy Mali
IFA	International Fertilizer Association

IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IFDC	International Fertilizer Development Center
IFPRI	International Food Policy Research Institute
IIAM	Agricultural Research Institute Mozambique
IITA	International Institute of Tropical Agriculture
IKEA	IKEA (IKEA Foundation)
ILRI	International Livestock Research Institute
IMF	International Monetary Fund
INERA	Environment and Agricultural Research Institute Burkina Faso
INRAN	National Institute for Agricultural Research Niger
IRM	International Raw Materials
IRRI	International Rice Research Institute
ISAAA	International Service for the Acquisition of Agrobiotech Applications
ISF	International Seed Federation
ISSER	Institute of Statistical, Social and Economic Research
ISU	Iowa State University
ITC	International Trade Centre
JAKF	John A. Kufuor Foundation
JICA	Japan International Cooperation Agency
JIRCAS	Japan International Research Center for Agricultural Sciences
JP Morgan	JP Morgan Chase
KALRO	Kenya Agricultural & Livestock Research Organization
KARI	Kenya Agricultural Research Institute
KCB Group	Kenya Commercial Bank Group
KEPHIS	Kenya Plant Health Inspectorate Service
KEPSA	Kenya Private Sector Alliance
KfW	KfW German Development Bank
Kilimo	Kilimo Trust
KIT	Royal Tropical Institute

KNARDA	Kano State Agricultural and Rural Development Authority
KNUST	Kwame Nkrumah University of Science
KoN	Kingdom of the Netherlands
KREP	KREP Fedha Services
KSC	Kenya Seed Company
KU	Kenyatta University
KUMWE	KUMWE Harvest
LDC	Louis Dreyfus Company
LEAP	Leadership Effectiveness, Accountability and Professionalism
LI	Leibniz Institute
Lundin	Lundin Group (Lundin Foundation)
MAAHBF	Ministry of Agriculture and Food Security Burkina Faso
MAAIFU	Ministry of Agriculture, Animal Industry and Fishery Uganda
MAHYCO	Maharashtra Hybrid Seeds Co. Limited
MARI	Mikocheni Research Institute
Mastercard	Mastercard (Mastercard Foundation)
MCAM	Millennium Challenge Account Mozambique
MCC	Millennium Challenge Corporation
McCain	McCain Institute
McKinsey	McKinsey & Company
MiDA	Millennium Challenge Development Authority Ghana
MINAGRIR	Ministry of Agriculture and Animal Resources Rwanda
MITC	Malawi Investment and Trade Centre
MMI	Market Matters Inc
MMP	Malabo Montpellier Panel
MoAE	Ministry of Agriculture Ethiopia
MoAFS	Ministry of Agriculture and Forestry Sudan
MoAFSM	Ministry of Agriculture and Food Security Mozambique
MoAIWDM	Ministry of Agriculture, Irrigation and Water Development Malawi
MoALFK	Ministry of Agriculture, Livestock and Fishery Kenya
MoAM	Ministry of Agriculture Mali

MoARDE	Ministry of Agriculture and Rural Development Ethiopia
MoAT	Ministry of Agriculture Tanzania
MoCC	Ministry of Commerce China
MoFAG	Ministry of Food and Agriculture Ghana
MoFPEDU	Ministry of Finance, Planning and Economic Development Uganda
MoIG	Ministry of Information Ghana
MoU	Moi University
MS	Mission Sahel
MSU	Michigan State University
MU	Makerere University
NA	Nourishing Africa
NAFSN	The North American Food System Network
NAGB	Nigerian Agribusiness Group
NARO	National Agricultural Research Organisation Uganda
NASC	National Agricultural Seeds Council Nigeria
NCCRI	National Crops Resources Research Institute Uganda
NCSU	North Carolina State University
NEPAD	The New Partnership for Africa's Development
NIFA	National Institute for Food and Agriculture
NIPC	Nigerian Investment Promotion Commission
NMBT	National Microfinance Bank Tanzania
NMF	Nelson Mandela Foundation
NORAD	Norwegian Agency for Development Cooperation
NPCK	National Potato Council of Kenya
NRCRI	National Root Crops Research Institute Nigeria
NSF	US National Science Foundation
NuI	Nutrition International
NVF	New Venture Fund
OFAB	Open Forum on Agricultural Biotechnology in Africa
OIBM	Opportunity International Bank Malawi
Olam	Olam International
PAFO	Pan-African Farmers Organization

PAIP	PAI Partners
Pannar	Pannar Seed
PBS	Program for Biosafety Systems
PCP	Pearl Capital Partners
PCTF	PeerCorps Trust Fund
Psaltry	Psaltry International
PSFU	Private Sector Foundation Uganda
PSP	Paine Schwartz Partners
PU	Peking University
PwC	PricewaterhouseCoopers International
RAB	Rwanda Agriculture Board
RaF	Raikes Foundation
RDA	Rural Development Administration South Korea
RDB	Rwanda Development Board
RENEW	RENEW LLC
REPOA	Research on Poverty Alleviation Programme
RF	Rockefeller Foundation
Rothschild	Rothschild & Co.
RWARRI	Rwanda Rural Rehabilitation Initiative
SACAU	Southern African Confederation of Agricultural Unions
Safin	Save the Future Initiative
SAGCOT	Southern Agricultural Growth Corridor of Tanzania
SahelC	Sahel Consulting
SANSOR	South African National Seed Organization
SARI	Savanna Agricultural Research Institute
SCCI	Seed Control and Certification Institute Zambia
SEDF	Soros Economic Development Fund
SEEDAN	Seed Entrepreneurs Association of Nigeria
SEMI	Seed Enterprise Management Institute
SIDA	Swedish International Development Cooperation
SMoFA	Swedish Ministry of Foreign Affairs
Stanford	Stanford University
StUN	Stellenbosch University

SU	Sokoine University
SUN	Scaling Up Nutrition Movement
SUNC	Start-Up Nation Central
TARI	Tanzania Agricultural Research Institute
TASTA	Tanzania Seed Trade Association
TBI	Tony Blair Institute for Global Change
TBS	Tanzania Bureau of Standards
TEF	Tony Elumelu Foundation
TFRA	Tanzania Fertilizer Regulatory Authority
TNC	The Nature Conservancy
Tongaat	Tongaat Hulett
TPSF	Tanzania Private Sector Foundation
UAA	Uganda Agribusiness Alliance
UBIC	Uganda Biosciences Information Center
UC Davis	University of California-Davis
UDET	Uganda Development Trust
UEM	Eduardo Mondlane University
UG	University of Ghana
UI	University of Ibadan
UIUC	University of Illinois
UK DFID	UK Department for International Development
UKZN	University of KwaZulu-Natal
UNADA	Uganda National Agro-input Dealer Association
UNCFS	UN Committee on World Food Security
UNECA	UN Economic Commission for Africa
UNEP	UN Environment Programme
UNL	University of Nebraska-Lincoln
UnSa	Unaitas Sacco
UNSCN	UN System Standing Committee on Nutrition
UNZA	University of Zambia
UoJ	University of Juba
UoM	University of Malawi
UoN	University of Nairobi

UoO	University of Ouagadougou
UoOr	University of Orebro
UoP	University of Pittsburgh
UoPH	University of Port Harcourt
UoS	University of Sydney
UP	University of Pretoria
UPB	Polytechnic University Bobo-Dioulasso
UPL	United Phosphorous Limited
USAID	United States Agency for International Development
USDA	US Department of Agriculture
USTA	Uganda Seed Trade Association
UWC	University of the Western Cape
VC4A	Venture Capital for Africa
ViSeeds	Victoria Seeds
Volcani	Agricultural Research Organization (Volcani Center)
VW	Volkswagen
WAAIF	West Africa Agriculture Investment Fund
WACCI	West African Centre for Crop Improvement
WASAA	Women in Agribusiness in Sub-Saharan Africa Alliance
WASCAL	West African Science Service Centre on Climate Change and Adapted Land Use
WEF	World Economic Forum
WeSeeds	Western Seeds
WFP	UN World Food Programme
WHH	Welthungerhilfe
WUR	Wageningen University & Research
WVC	World Vegetable Center
ZARI	Zambian Agricultural Research Institute
ZEF	Center for Development Research Bonn
ZITIC	Zambian International Trade and Investment Centre